AD-A052 469 ARINC RESEARCH CORP ANNAPOLIS MD F/G 13/10
SHIP SYSTEMS DEFINITION AND INDEX (SWBS STAGING DIAGRAMS) FOR F--ETC(U)
OCT 76 N00140-76-D-0813
UNCLASSIFIED 1804-01-1-1547 NL

1 OF 3
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AD A052469

Publication 1804-01-1-1547

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SHIP SYSTEMS DEFINITION AND INDEX (SWBS STAGING DIAGRAMS) FOR FF-1052 CLASS SHIPS

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PEARL HARBOR NAVAL SHIPYARD

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER (14) 1804-01-1-1547	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) (6) SHIP SYSTEMS DEFINITION AND INDEX (SWBS STAGING DIAGRAMS) FOR FF-1052 CLASS SHIPS.		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER 1804-01-1-1547
7. AUTHOR(s) NOT LISTED		8. CONTRACT OR GRANT NUMBER(s) (15) N00140-76-D-0813-0004
9. PERFORMING ORGANIZATION NAME AND ADDRESS ARINC Research Corp. 2551 Riva Road Annapolis, Maryland 21401		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS (12) 256p.
11. CONTROLLING OFFICE NAME AND ADDRESS PEARL HARBOR NAVAL SHIPYARD		(11) 12. REPORT DATE Oct [redacted]76
		13. NUMBER OF PAGES 129
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) PEARL HARBOR NAVAL SHIPYARD		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) UNCLASSIFIED/UNLIMITED		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		

400 247

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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Publication 1804-01-1-1547

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ABBREVIATIONS

A.P.	–	After Perpendicular
APL	–	Approved Parts List
ASROC	–	Anti-Submarine Rocket
ASW	–	Anti-Submarine Warfare
CDC	–	Component Dictionary Code
C.L.	–	Centerline
CNO	–	Chief of Naval Operations
COSAL	–	Coordinated Shipboard Allowance List
CPO	–	Chief Petty Officer
CSMP	–	Current Ship's Maintenance Project
DART	–	Detection, Action, Response Technique
DoD	–	Department of Defense
D.W.L.	–	Designer's Waterline
EIC	–	Equipment Identification Code
EOSS	–	Equipment Operational Sequencing System
FLT CINCS	–	Fleet Commanders-in-Chief
FMP	–	Fleet Modernization Program
F.P.	–	Forward Perpendicular
INSURV	–	Board of Inspection and Survey
MDCS	–	Maintenance Data Collection System
MOTU	–	Mobile Technical Unit
NAVAIR	–	Naval Air Systems Command
NAVELEX	–	Naval Electronics Systems Command
NAVPERS	–	Naval Personnel
NAVSEA	–	Naval Sea Systems Command
NAVSEC	–	Naval Ships Engineering Center
NAVSUP	–	Naval Supply
NMMFO	–	Navy Maintenance Management Field Office
NOSO	–	Naval Ordnance Support Office
PMS	–	Planned Maintenance System
POT&I	–	Preoverhaul Test and Inspection
ROH	–	Regular Overhaul
SECAS	–	Ship Equipment Configuration Accounting System
SSDI	–	Ship Systems Definition and Index
SWBS	–	Ship Work Breakdown Structure
SYSCOM	–	Systems Command
TYCOM	–	Type Commander

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DDC Buff Section
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Dist. AVAIL. and/or SPECIAL
A

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1. INTRODUCTION

Under Contract N00140-76-D-0813-0004, ARINC Research Corporation was tasked to revise the FF-1052 Class Ship System Definition and Index (SSDI)* issued in April 1975 to incorporate changes resulting from experience in its application, and to revise the equipment-level code numbers in accordance with a newly issued Component Code Dictionary.

The SSDI is an orderly identification and structuring of the systems and subsystems that make up a ship. In defining ship systems as well as their boundaries and interfaces, the SSDI provides a common language for communicating information about ship configurations. The SSDI is thus useful to many naval activities involved in the operation, maintenance, modernization, and support of ships.

This report discusses the general properties of SSDI's (Section 2), describes the ways SSDI's can be utilized by the various Navy activities (Section 3), provides general information on FF-1052 class ships (Section 4), and presents the SSDI's for the FF-1052 class (Section 5).

*ARINC Research Corporation, Ship Systems Definition and Index (SWBS Staging Diagrams) for DE-1052 Class Ships, Publication 1630-01-1-1389, April 1975. Prepared for Pearl Harbor Naval Shipyard under Contract N00604-75-C-0276.

2. PROPERTIES OF SSDI

The Ship Systems Definition and Index is an orderly description of the systems that make up a ship. The SSDI is structured such that the summation of its diagrammed items at any level defines the total ship, as illustrated in Figure 1. An actual application of Figure 1, showing a typical ship breakdown from the major system to the sub-subsystem level, is presented in Figure 2. As demonstrated by these figures, the SSDI is structured to:

a. Provide a multi-level breakdown of the ship's configuration, thereby providing for visibility and control at any desired level of detail.

b. Completely define the ship at each level.

c. Contain no redundancies in its definition of the ship.

d. Utilize the Ships Work Breakdown Structure (SWBS). This provides a standard language based on the same nomenclature and coding system that is mandatory for use on a Navy-wide basis.

e. Utilize a standard Navy Component Dictionary Code (CDC) list for assigning fifth-level identification codes. The last two characters of the identifier are from this list, e.g., 2551M7.

f. Tailor the SWBS to the configuration of a specific ship class. The ship class diagram can in turn be tailored to the configuration of each ship within the class.

Figure 3 extends a portion of Figure 2 to an additional level of detail to demonstrate the information provided in the SSDI. As shown, the following are identified:

a. System equipments

b. System boundaries

c. Shipboard maintenance work centers.

In some cases, notably for the more complicated systems, the SSDI provides still further information in the form of line diagrams that:

a. Show the major hardware items within the system boundaries and their physical relationship – for example, the connecting of a turbine to its pump.

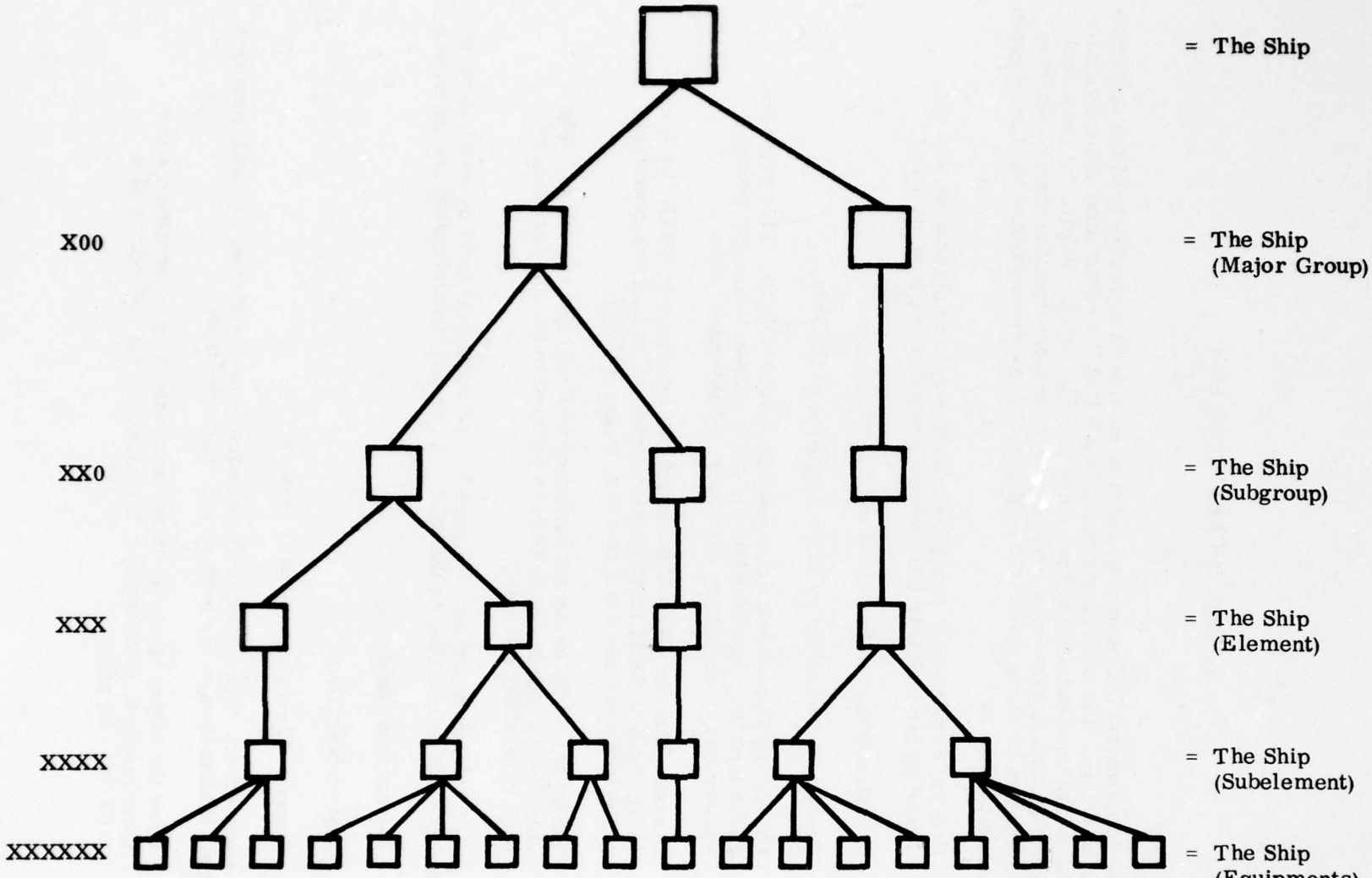


Figure 1. SSDI Concept

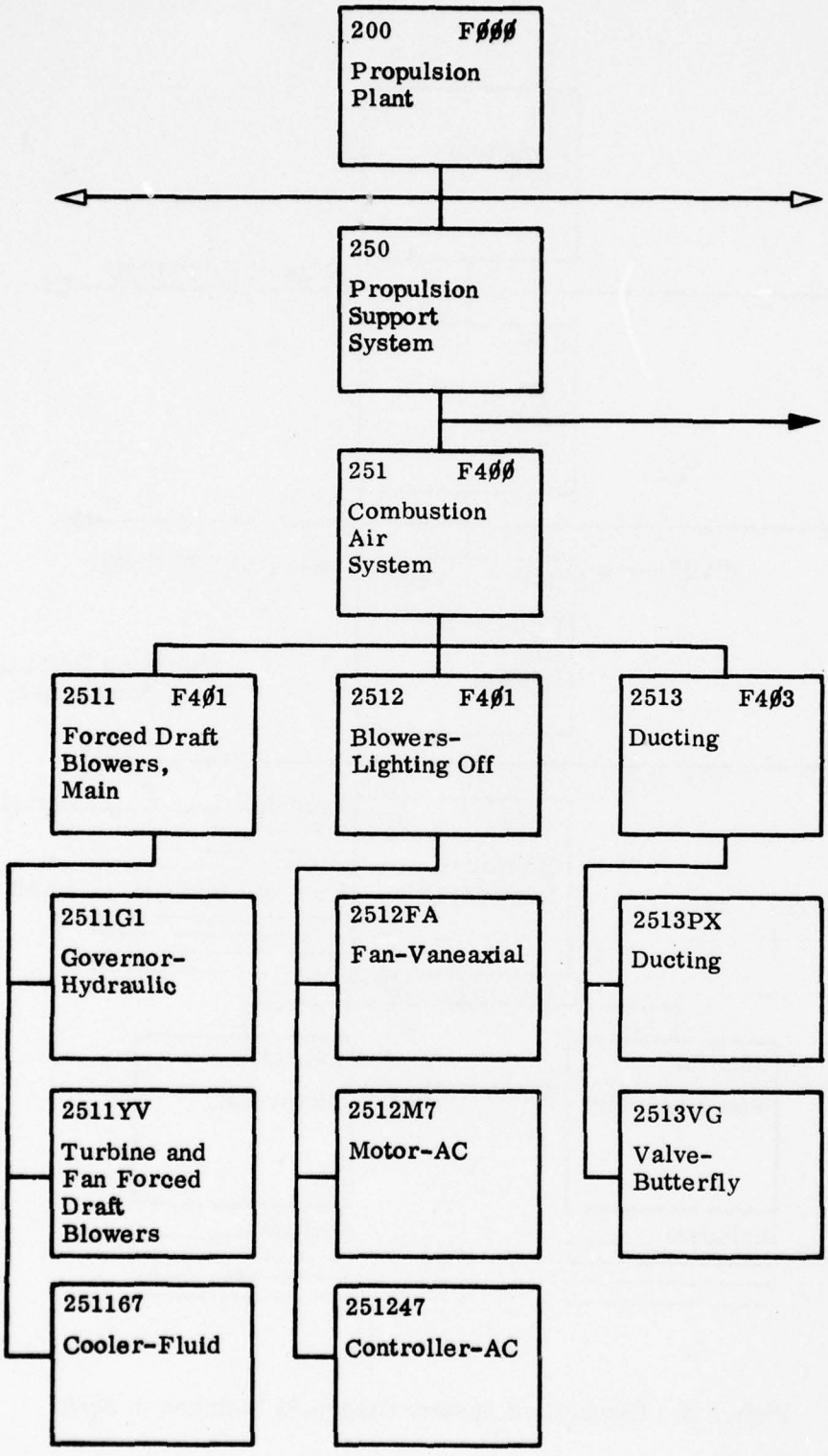


Figure 2. Portion of a Typical Ship's System

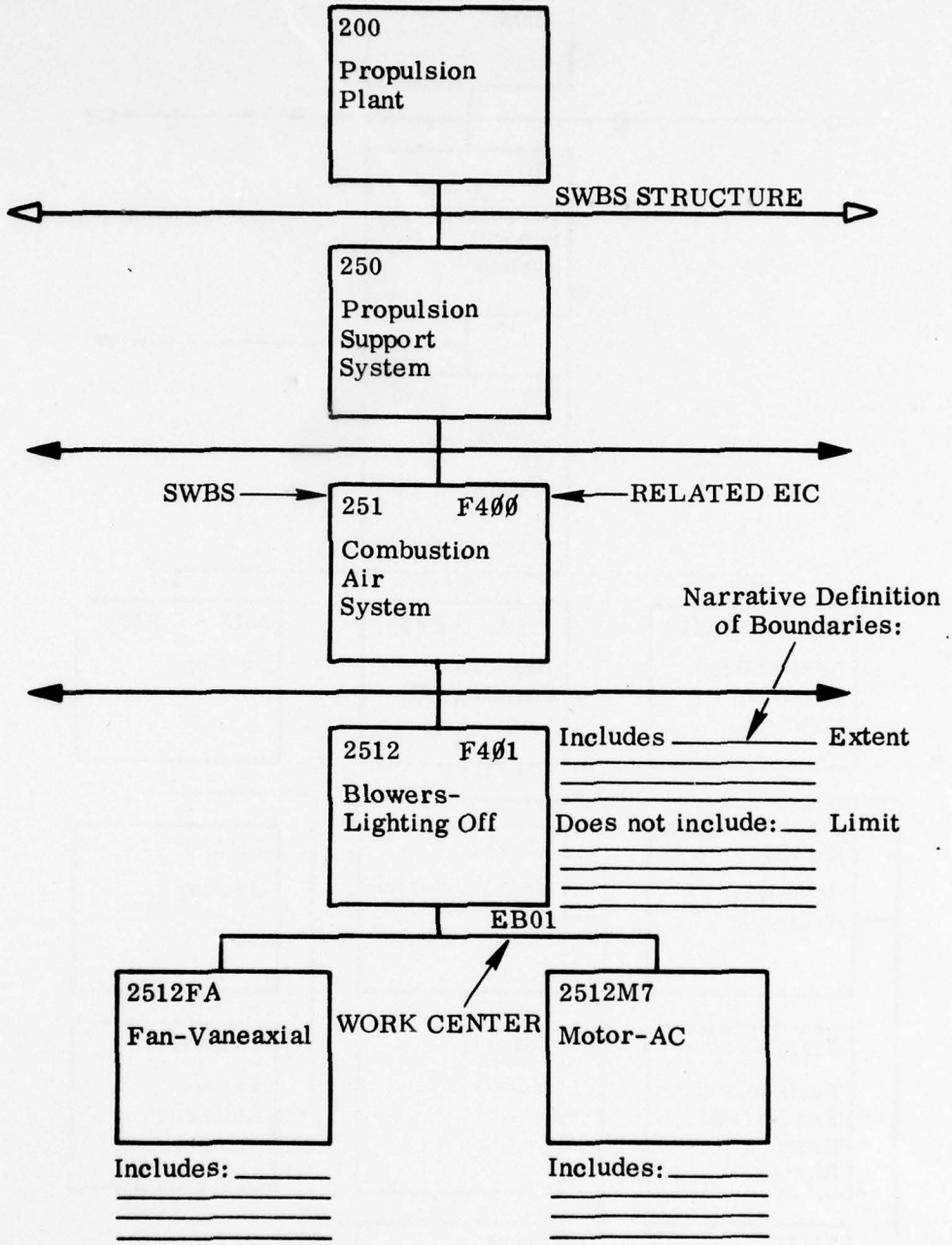


Figure 3. Example of System Diagrams Included in SSDI

b. Depict graphically the verbal description shown on the system diagrams for selected SWBSs. Those systems which are complex and interface with other complex systems are diagrammed as Figure 4 indicates.

c. Graphically depict the selected system's boundaries and interrelated SWBSs.

Within a line diagram, all equipment or components represented by solid lines belong to a particular system. Equipment or components represented by broken or dashed lines, even if located within the system boundary, are part of another system. As illustrated in Figure 4, tracing these lines to the system boundary will show the interfacing systems.

While some of the line diagrams show functional relationships, that is not their basic intent. Their primary purpose is to aid in the identification of ship systems. To expedite this process, the diagrams are greatly simplified from the actual configuration. For example, although there may be two or more identical forced-draft blowers used in a condensate system, only one is shown on the schematic (see Figure 4).

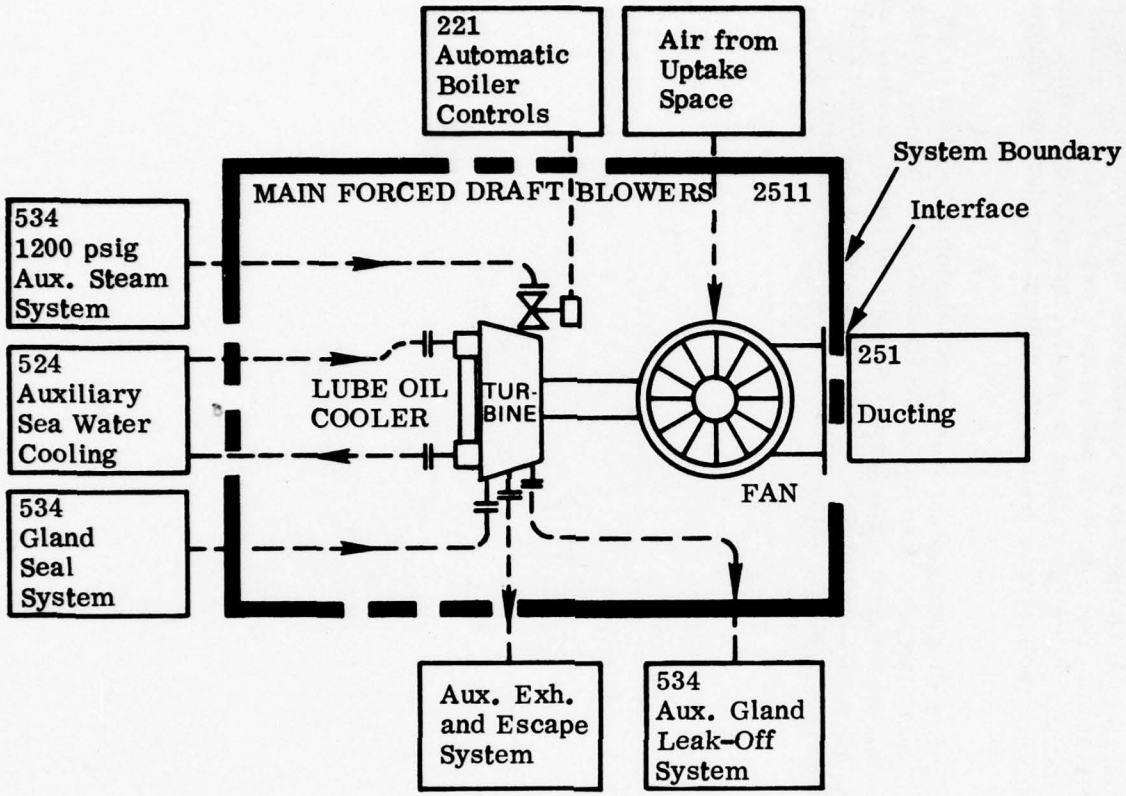


Figure 4. Example of Line Diagrams Included in SSDI

3. USES OF SSDI

Throughout a ship's life, ship's force personnel submit a vast amount of system, equipment, and parts information to their type commander and fleet support activities. Requests for alteration, reports of maintenance action, work requests, and parts requisitions are but a few examples. In each instance the submitted information must be related to a specific, definable portion of the ship.

In carrying out their responsibilities, the type commander and the support activities must not only identify a specific item within the total ship, but also be aware of its interfaces. In planning alterations or modifications, for example, the technical systems commands (NAVSEA, NAVELEX, NAVAIR) must be able to identify the various systems that will be affected by a particular change to a ship's configuration. Also, when preparing for overhaul or other availabilities, the type commander and repair activities must be able to organize a work package on the basis of specific as well as interrelated ship systems. This is done to ensure that the work package is completely and effectively defined.

Since so many activities are involved in supporting the ship, it is necessary that both ship and support personnel use a single, uniform language when communicating configuration information. The Ship Systems Definition and Index provides this common language by describing a specific ship in terms common to all ships of the fleet. As illustrated in Figure 5, it is a means of communicating information about a ship in a way that can be understood by all. Potential uses of the SSDI are outlined below.

3.1 SSDI SUPPORT TO SHIP'S FORCE

3.1.1 Maintenance

a. Serves as a checklist for planning and conducting inspections.

b. Provides the basis for comparing repair items with alterations.

c. Aids in establishing repair priorities.

d. Assists in identifying shipyard, ship's force, and tender interfaces.

e. Assists in making manpower assignments by ensuring that all systems of the ship are considered.

f. Aids ship's force in "buttoning up" all systems for post-repair testing.

g. Aids in alteration planning and analysis by showing possible interfaces in terms of various ship systems.

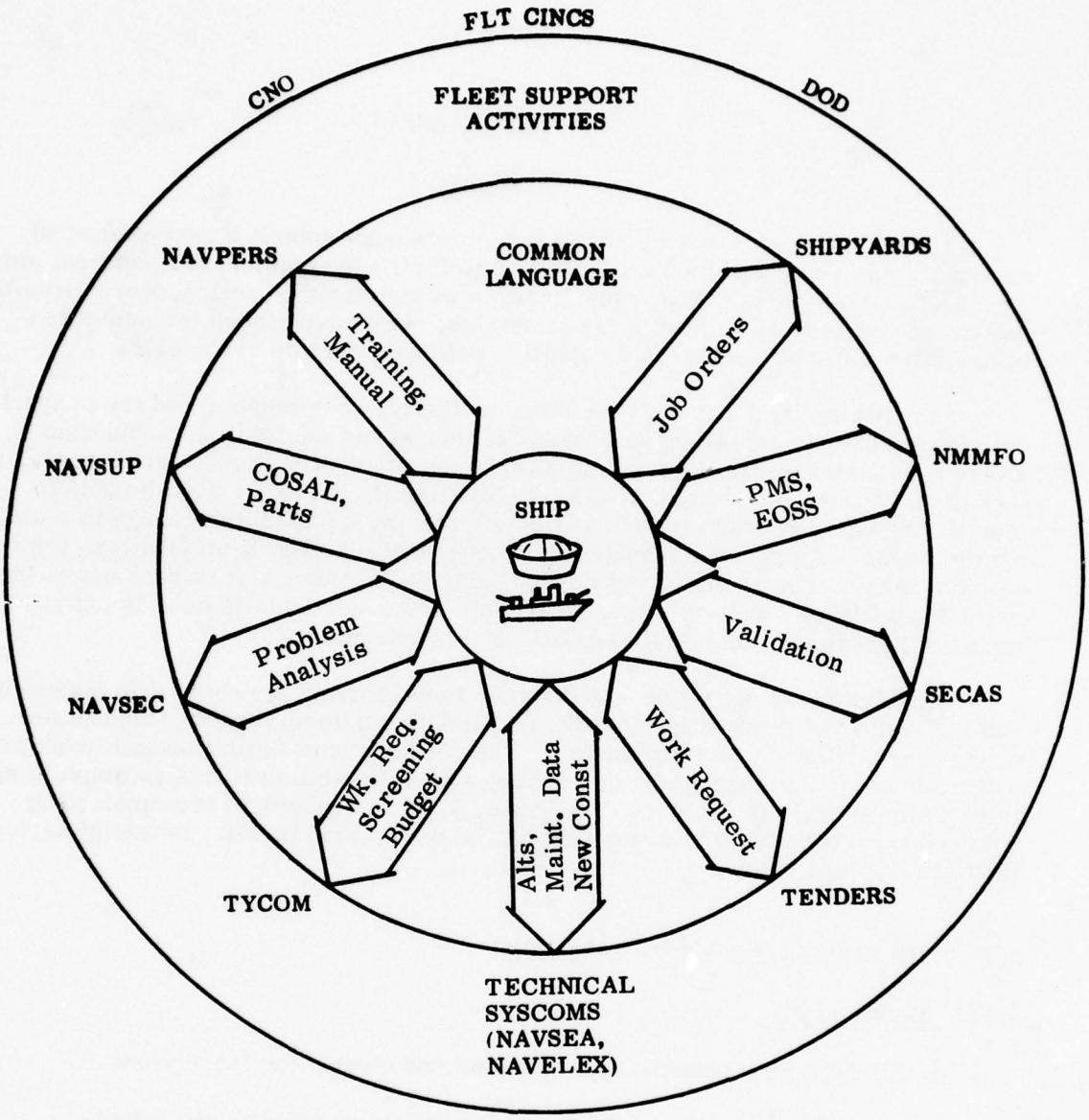


Figure 5. Uses of Ship Systems Definition and Index

h. Aids in standardizing shipboard validation procedures.

i. Provides a means of identifying deficiencies in shipboard documentation such as the Coordinated Shipboard Allowance List (COSAL), Planned Maintenance System (PMS), etc.

j. Provides a capability for reducing duplication in validation programs.

k. Assists in identifying Equipment Identification Codes needed as inputs to the Current Ship's Maintenance Project (CSMP) and Maintenance Data Collection System (MDCS).

l. Provides a standard language for maintenance documentation.

m. Provides a common set of system descriptions for the development of maintenance instructions (PMS) and operating instructions (Equipment Operational Sequencing System, EOSS).

3.1.2 Operation

a. Serves as a checklist for determining the completeness of EOSS coverage.

b. Provides a means of identifying the interrelationship between operating systems.

c. Identifies the boundaries and checkpoints for system testing.

d. Provides a means of determining test equipment and support requirements.

3.1.3 Training

a. Provides a disciplined method for displaying a ship's configuration, thereby identifying training requirements from the equipment through the system level.

b. Provides the primary aid in training shipboard operation/maintenance personnel in ship systems and system interfaces.

3.2 SSDI SUPPORT TO OTHER NAVAL ACTIVITIES

3.2.1 PERAs/Shipyards/Industrial Activities

a. Defines ship systems for alteration and repair planning.

b. Provides a standard language for:

- Specification preparation

- Cost estimating and progressing

- Drawing numbering

- Material identification and ordering

- Pre-Overhaul Test and Inspection (POT&I) planning and organization

- Management information systems

c. Assists in determining priorities of work by displaying the affected equipment in relation to its system.

3.2.2 Ship Equipment Configuration Accounting System (SECAS)

a. Provides a standard structure for total shipboard validation.

b. Provides information for determining the desired level of validation.

3.2.3 Technical Systems Commands (NAVSEA, NAVELEX)

a. Aids in determining the SWBS identification of alterations for inclusion in shipalt records and subsequently in other Navy data bases.

b. Identifies ship systems such that the impact of alterations can be determined and decisions made concerning recommended priorities for inclusion in the Fleet Modernization Program (FMP).

c. Provides a means for ensuring that standard failure-data correlation and analysis is performed to the desired level.

d. Serves as a baseline for the development of a complete ship test program.

3.2.4 Type Commanders (TYCOMs)

a. Aids in determining work priorities by displaying the affected equipment in relation to its system.

b. Identifies the system such that the impact of alterations can be determined and decisions made concerning recommended priorities for inclusion in the FMP.

c. Enables the TYCOM to properly identify and budget the system for repairs.

3.2.5 Naval Ships Engineering Center (NAVSEC)

a. Provides a vehicle for ensuring that standard failure-data correlation and analysis is performed to the desired level.

b. Defines the systems for design consideration and subsequent corrective measures such as the Detection, Action, Response Technique (DART) program.

c. Provides detailed information for determining the required level of repair parts support requirements.

3.2.6 Fleet Support Activities

a. Identifies shipboard systems as an aid in determining personnel and material requirements in response to solving specific ship problems.

b. Serves as a tool for establishing required support capabilities (people and equipment).

4. GENERAL INFORMATION, FF-1052 CLASS

The data given in this section are generally applicable to the FF-1052 class. For individual ships of this class, consult the appropriate Ship's Information Book.

4.1 BASIS OF HULL MEASUREMENTS

The designers waterline (D.W.L.) is the waterline corresponding to the normal displacement and draft. This waterline is 14' 9" above and parallel to the molded base line, and is the draft datum line for showing heights of superstructure, rigging, etc., as authorized by NAVSEA. This datum line is measured from the bottom of the keel plate amidships, which is 1/4" below the molded base line.

The forward perpendicular (F.P.) is a vertical passing through the point where the designer's waterline and the forward side of the ship's stern intersect. The after perpendicular (A.P.) is a vertical passing through the point where the designer's waterline and the molded line of the ship's stern intersect.

4.2 GENERAL DIMENSIONS AND CHARACTERISTICS

Length, between perpendiculars	415' - 0"
Length, overall	438' - 0"
Breadth, extreme	46' - 7 1/4"
Draft above bottom of keel amidships (D.W.L.)	14' - 9 7/8"
Draft above lowest projection below keel (D.W.L.)	24' - 8 1/4"
Displacement to D.W.L. (salt water)	3,945 tons

4.3 HEIGHTS ABOVE D.W.L.

(D.W.L. 14' - 9" above molded base line)

Quadmast, including antenna No. 4-2	104' - 2 1/2"
C.L. of homing beacon	107' - 6 1/8"
C.L. of forward anchor light	44' - 0"
C.L. of masthead light	56' - 11 1/4"
C.L. of towing lights	
Upper	62' - 11 1/4"
Lower	50' - 11 1/4"
C.L. of sidelight (P/S)	33' - 0 3/4"
C.L. of blinker light (P/S)	72' - 7 1/2"
C.L. of range light	92' - 10"
C.L. of speed and aircraft warning lights (P/S)	118' - 1 5/8"
C.L. of ASW light	98' - 11 1/2"

C.L. of man overboard and breakdown lights (2) and ships task lights (3)	
Upper	118' - 7 3/8"
Middle	112' - 1 3/8"
Lower	105' - 7 3/8"
C.L. of aft anchor light	28' - 9"
C.L. of white stern light	19' - 9 7/16"
C.L. of blue stern light	18' - 5 7/16"
C.L. of wake light (P)	17' - 3' 5/16"
C.W.P. of rotating antenna No. 5-1	101' - 11 1/2"
C.W.P. of rotating antenna No. 5-2	81' - 4 1/2"
Underside of platform on quadmast	92' - 1 1/2"
06 level at top of billboard	67' - 1 1/2"
05 level at top of mack	58' - 1 1/2"
04 level in uptake space	49' - 1 1/2"
03 level at C.L. - aft FR 45	42' - 6 1/8"
03 level at C.L. - FR 54 (gun director platform)	44' - 11 1/2"
03 level in uptake space	40' - 1 1/2"
C.I.C. high hat	37' - 7 1/8"
02 level at C.L. - FR 45 1/2 (pilot house)	34' - 6 1/8"
02 level - FR 54 to 6" aft FR 69 (otbd C.I.C. high hat)	36' - 5 1/8"
02 level at C.L. - 6" aft FR 69	31' - 6 1/2"
02 level at C.L. - FR 93	30' - 9 1/2"
02 level at C.L. - FR 101 to FR 110	32' - 6 1/8"
02 level at C.L. - FR 110 (top of helo hangar)	35' - 10 1/2"
01 level at C.L. - FR 45 1/2 to FR 54	26' - 6 1/8"
01 level at C.L. - FR 54	24' - 6 1/8"
01 level at C.L. - FR 147	23' - 5 1/4"

4.4 SMALL BOATS

No.	Name	Each	Total
16	CO_2 Lifeboats	15	240
1	26' - 0" Personnel Boat	16	16
1	26' - 0" Motor Whaleboat	22	22
	TOTAL		278

4.5 BERTHING ACCOMMODATIONS

Berths		Lockers	
Officers	17	Type A	15
CPO	15	Type B	33
Crew	225	Peacoat	11
		CPO (Blue Uniform)	1
		CPO (Overcoat)	2

4.6 CAPACITY OF BOOMS AND CRANES

Boat Boom	3900 lb
Bathythermograph Boom	400 lb
ASROC and Torpedo Handling Boom	4000 lb
Mk 37 and EX 10 Torpedo Trolley Hoist - No. 2	4000 lb
Torpedo Magazine Crane - No. 1	1000 lb
ASROC Handling System	1500 lb

4.7 FRAME SPACING

Frames are numbered from 0 at the forward perpendicular to 166 at the after perpendicular. Frame spacing is 30" throughout.

Ships of the FF-1052 class are longitudinal framed vessels. Transverse framing does not exist at each frame numbered location. Transverse webs are spaced approximately every three frames between Frame 18 and the stern, and every two frames forward of Frame 18.

Part frames in the forward overhang are designated as "A", "B", "C", "D", "E", "F", and "G".

4.8 TANK CAPACITIES AT FULL LOAD CONDITIONS FOR FF-1052 - 1077

Tank	Gallons	Tons
a. Potable Water		
5-107-1-W	1,775	6.59
5-107-2-W	1,773	6.59
5-114-1-W	3,277	12.17
5-114-2-W	3,277	12.17
Total	10,104	37.52
b. Reserve Feed Water		
3-92-1-W	2,351	8.73
3-92-2-W	2,351	8.73
5-107-0-W	3,280	12.18
5-110-0-W	3,622	13.45
Total	11,604	43.09
c. Lube Oil		
5-101-1-F	1,078	3.70
5-104-3-F	1,034	3.55
Total	2,112	7.25

Tank	Gallons	Tons
d. JP-5		
5-125-0-J	12,797	38.79
5-137-0-J	13,661	41.41
Service Tank	1,000	3.03
Total	27,458	83.23
e. Fuel Oil		
(1) Storage		
5-29-1-E	4,871	17.15
5-29-2-F	4,871	17.15
5-41-1-F	15,856	55.83
5-41-2-F	15,856	55.83
5-48-1-F	15,819	55.70
5-48-2-F	15,819	55.70
5-54-1-F	20,888	73.55
5-54-2-F	20,888	73.55
5-61-1-F	10,724	37.76
5-61-2-F	10,724	37.76
5-121-1-F	6,558	23.09
5-121-4-F	5,430	19.12
5-126-1-F	6,168	21.72
5-126-2-F	6,168	21.72
5-132-1-F	7,231	25.46
5-132-2-F	7,231	25.46
5-150-0-F	8,219	28.94
Total	183,321	645.49
(2) Service		
4-76-0-F	12,320	43.38
5-61-0-F	18,503	65.15
Total	30,823	108.53
Total Fuel Oil	214,144	754.02

5. SSDI FOR FF-1052 CLASS SHIPS

5.1 SSDI INDEX

The SSDI for FF-1052 class ships is presented on the following pages. The diagrams appear in the following order.

Index Diagrams	Page
Overall	27
100 – Hull Structure	28
200 – Propulsion Plant	29
300 – Electric Plant	30
400 – Command and Surveillance	31
500 – Auxiliary Systems	32
600 – Outfit and Furnishings	33
700 – Armament	34
800 – Integration/Engineering	35
Legend of Symbols	37
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500 – Auxiliary Systems	151
600 – Outfit and Furnishings	205
700 – Armament	233
800 – Integration/Engineering	245

The Legend of Symbols provides guidance to the ship system diagrams that accompany certain of the diagrams.

5.2 GENERAL COMMENTS

The following general comments apply to the FF-1052 class SSDI:

a. In each WBS group, elements X01 through X09 are used for general requirements, and element X98 is used for operating liquids. These nonhardware elements are indicated by dashed blocks.

b. To maintain continuity of having equipments/components at the fifth level, some element titles have been repeated at the fourth and fifth levels and appropriately numbered, e.g., element 115.

c. The term "With System", or "W.S.", indicates that the item is coded with the system of which it is a part of or which it serves.

d. EIC cross-references are entered only in blocks with a direct cross-reference, i.e., same system, subsystem, equipment as a SWBS classification.

e. Work center assignments apply only to USS WHIPPLE (FF-1062). Use of the SSDI for other ships of the class will require verification of applicable work centers.

f. Elements where no specific equipments could be identified at this time (e.g., future installations) are shown by double-dashed blocks.

5.3 SWBS CLASSIFICATIONS NOT INCLUDED

The WBS groups, subgroups, and elements listed in Table 1 were determined to be not applicable to the FF-1052 class for purposes of this Ship System Definition and Index.

TABLE 1. NONAPPLICABLE WBS ITEMS FOR FF-1052 CLASS SSDI
(Sheet 1 of 4)

Group	Subgroup	Element	Title
GROUP 0: GENERAL GUIDANCE AND ADMINISTRATION			
000	All	All	General Guidance & Administration
GROUP 1: HULL STRUCTURE			
100	110	112	Shell Plating, Submarine Nonpressure Hull
		113	Inner Bottom
		118	Longitudinal and Transverse Submarine Nonpress. Hull Framing
	120	124	Bulkheads in Torpedo Protection System
		125	Submarine Hard Tanks
		126	Submarine Soft Tanks
	130	133	3rd Deck
		134	4th Deck
		135	5th Deck
	140	143	3rd Platform
		144	4th Platform
		145	5th Platform
	150	157	6th Deckhouse Level
		158	7th Deckhouse Level
		159	8th Deckhouse Level and Above
	160	164	Ballistic Plating
		166	Sponsons
	190	195	Erections of Subsections (Progress Report Only)
GROUP 2: PROPULSION PLANT			
200	210	All	Energy Generating System (Nuclear)
	220	222	Gas Generators
		223	Main Propulsion Batteries
		224	Main Propulsion Fuel Cells
	230	232	Propulsion Steam Engines
		233	Propulsion Internal Combustion Engines
		234	Propulsion Gas Turbines
		235	Electric Propulsion
		236	Self-Contained Propulsion Systems
		237	Auxiliary Propulsion Devices
		238	Secondary Propulsion (Submarines)
		239	Emergency Propulsion (Submarines)

TABLE 1. (Sheet 2 of 4)

Group	Subgroup	Element	Title
GROUP 2: PROPULSION PLANT (Continued)			
200	240	246	Propulsor Shrouds and Ducts
		247	Water Jet Propulsors
	260	263	Shaft Lube Oil System (Submarines)
GROUP 3: ELECTRIC PLANT			
300	310	312	Emergency Generators
	320	322	Emergency Power Cable System
GROUP 4: COMMAND AND SURVEILLANCE			
400	410	412	Data Processing Group
		413	Digital Data Switchboards
		414	Interface Equipment
		415	Digital Data Communications
		416	Command and Control Testing
		417	Command and Control Analog Switchboards
	420	425	Periscopes
		427	Inertial Navigation Systems
		428	Navigation Control Monitoring
	440	444	Telemetry Systems
	450	453	Air Search Radar (3D)
		454	Aircraft Control Approach Radar
		459	Space Vehicle Electronic Tracking
	460	461	Active Sonar
		464	Classification Sonar
	470	476	Mine Countermeasures
	490	492	Flight Control and Instrument Landing Systems
		493	Non-Combat Data Processing Systems
		494	Meteorological Systems
		495	Integrated Operational Intelligence Systems
GROUP 5: AUXILIARY SYSTEMS			
500	510	515	Air Revitalization Systems (Submarines)
		517	Auxiliary Boilers and Other Heat Sources
	540	543	Aviation and General Purpose Lubricating Oil
		544	Liquid Cargo

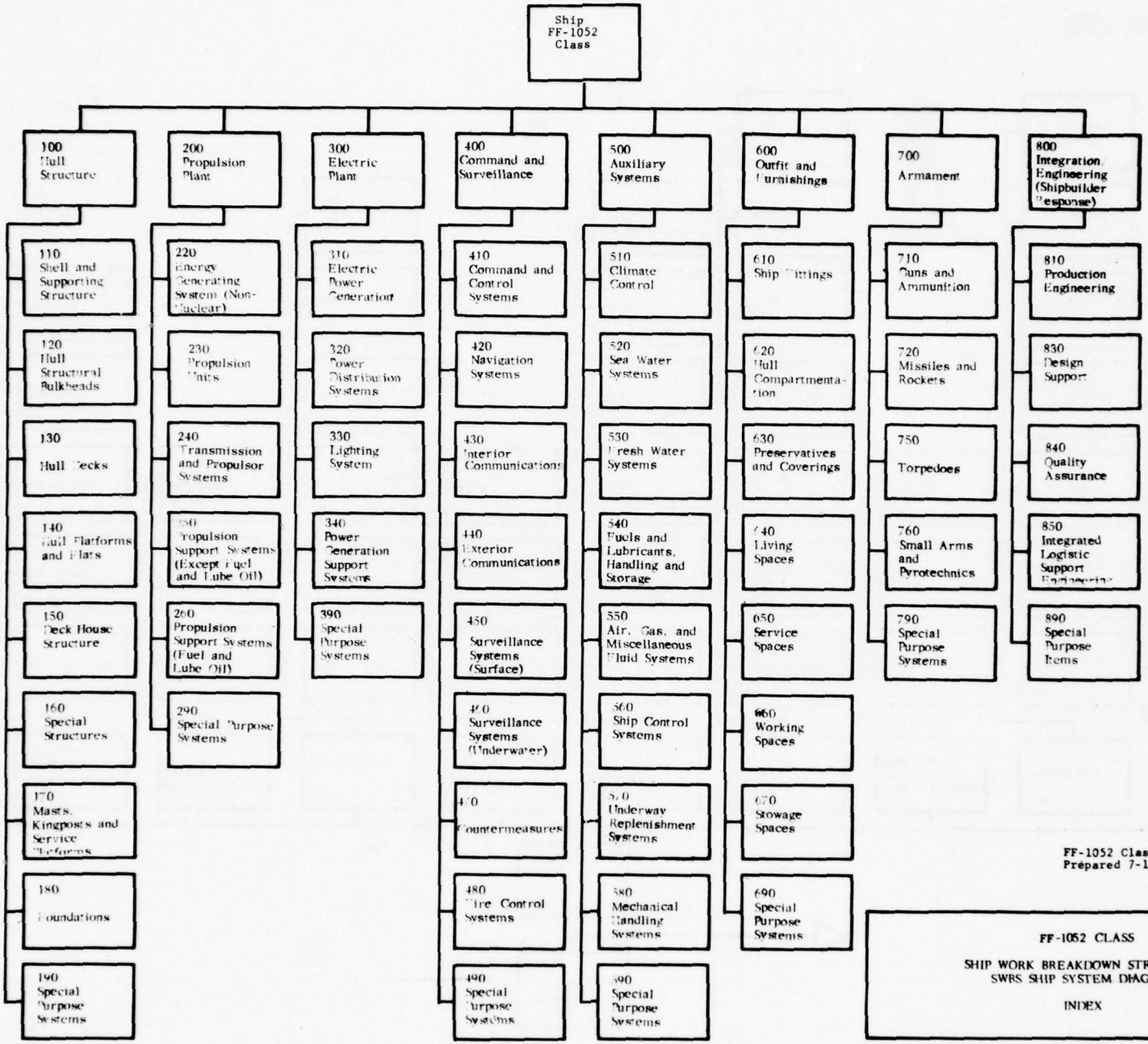
TABLE 1. (Sheet 3 of 4)

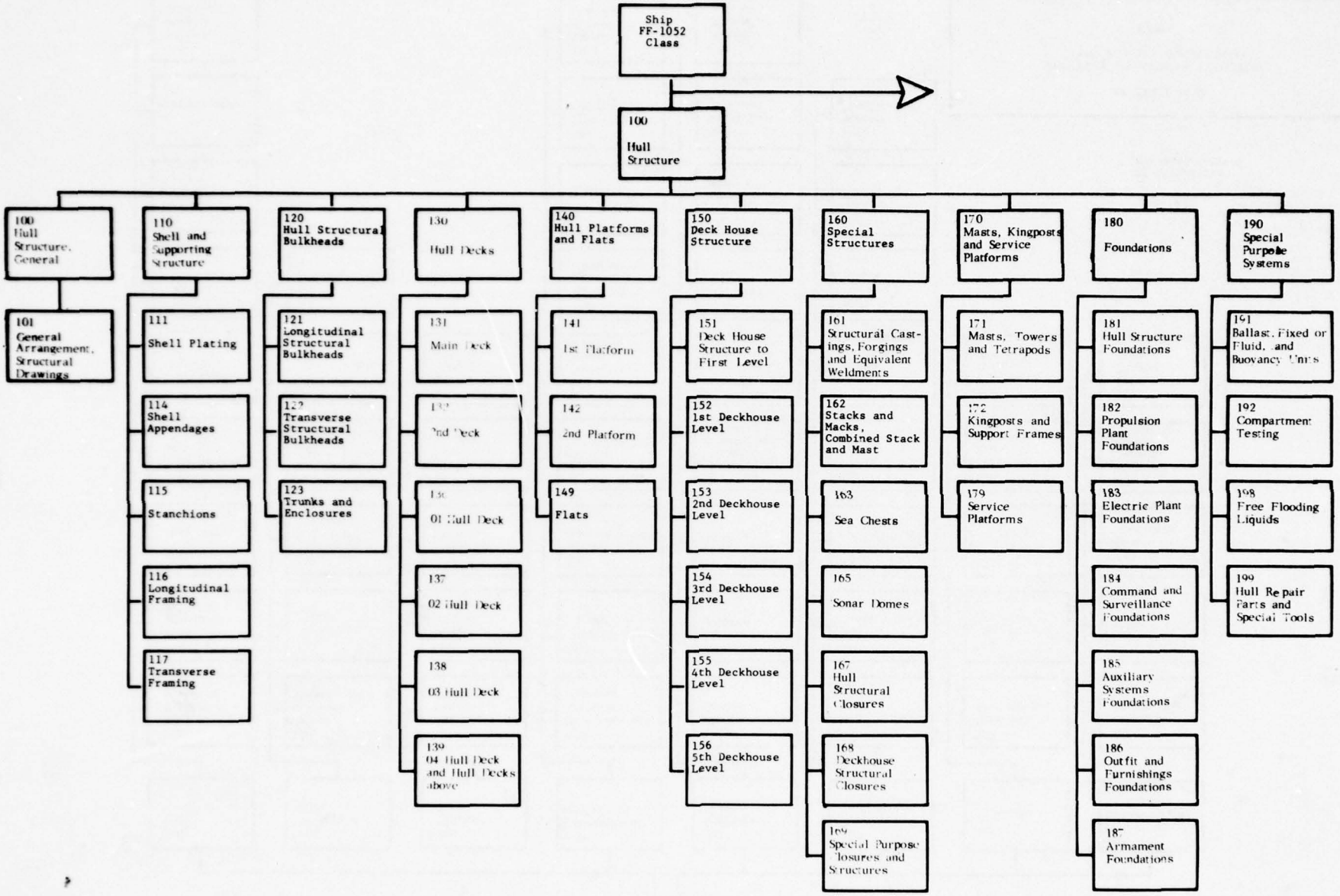
Group	Subgroup	Element	Title
GROUP 5: AUXILIARY SYSTEMS (Continued)			
500	550	552	Compressed Gases
		553	O_2N_2 System
		554	LP Blow
		556	Hydraulic Fluid System
		557	Liquid Gases, Cargo
		558	Special Piping Systems
	560	563	Buoyancy and Hovering (Submarines)
		564	Trim System (Submarines)
		565	Trim and Heel (Roll Stabilization)
		567	Lift Systems
		568	Maneuvering Systems
	570	573	Cargo Handling
	580	585	Elevating and Retracting Gear
		586	Aircraft Recovery Support Systems
		587	Aircraft Launch Support Systems
		589	Miscellaneous Mechanical Handling Systems
	590	591	Scientific and Ocean Engineering Systems
		592	Swimmer and Diver Support and Protection Systems
		594	Submarine Rescue, Salvage and Survival Systems
		596	Handling System for Diver and Submersible Vehicles
		597	Salvage Support Systems
GROUP 6: OUTFIT AND FURNISHINGS			
600	630	639	Radiation Shielding
	650	653	Dental Spaces
	670	673	Cargo Stowage
GROUP 7: ARMAMENT			
700	720	724	Missile Hydraulics
		725	Missile Gas
		726	Missile Compensating
	730	All	Mines
	740	All	Depth Charges
	750	754	Submarine Torpedo Ejection

TABLE 1. (Sheet 4 of 4)

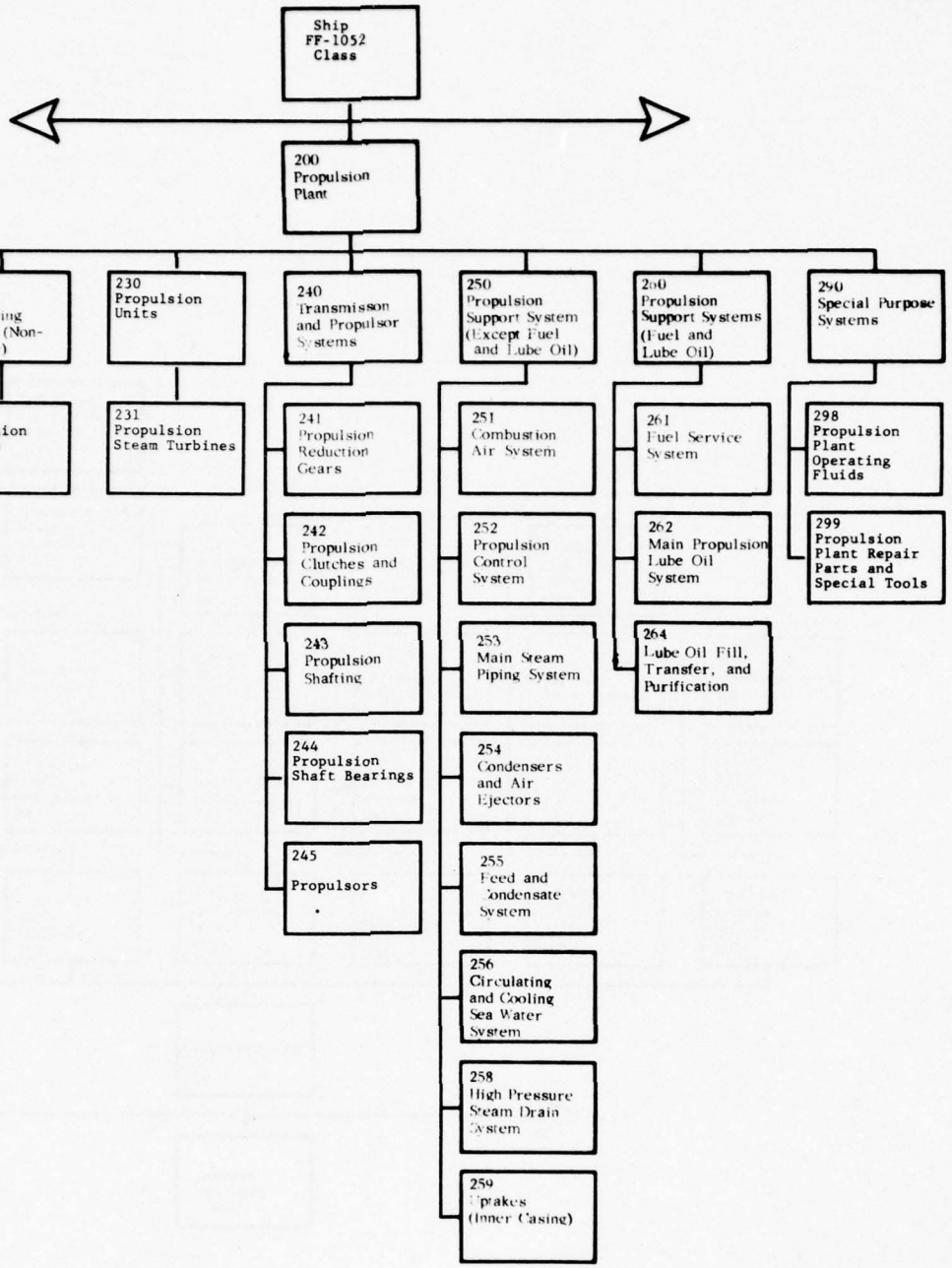
Group	Subgroup	Element	Title
GROUP 7: ARMAMENT (Continued)			
700	770	All	Cargo Munitions
	780	All	Aircraft Related Weapons
GROUP 8: INTEGRATION/ENGINEERING (SHIPBUILDER RESPONSE)			
800	820	All	Special Drawings for Nuclear Propulsion Systems
GROUP 9: SHIP ASSEMBLY AND SUPPORT SERVICES			
900	All	All	Ship Assembly and Support Services

SHIP SYSTEMS DEFINITION AND INDEX
FOR FF-1052 CLASS SHIPS

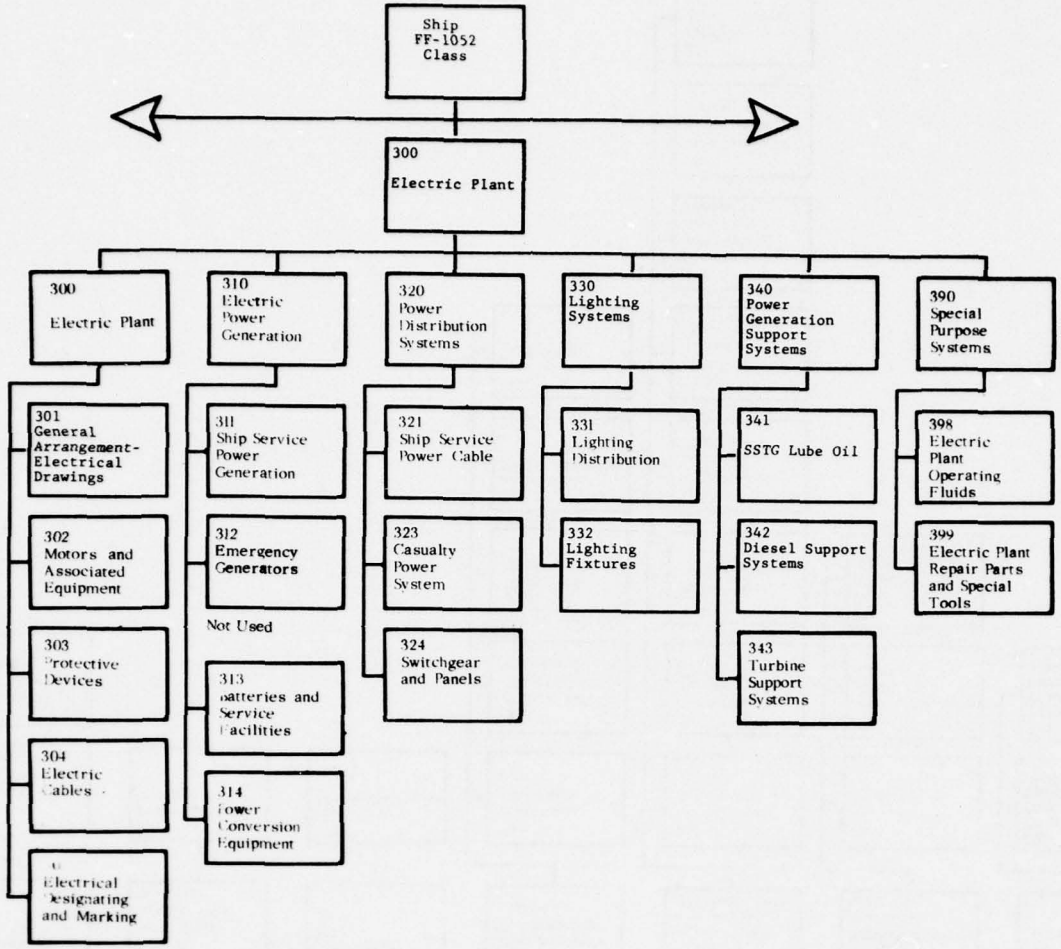

Ship
FF-1052
Class
100
Hull
Structure
110
Shell and
Supporting
Structure
120
Hull
Structural
Bulkheads
130
Hull Decks
140
Hull Platforms
and Flats
150
Deck House
Structure
160
Special
Structures
170
Masts,
Kingposts and
Service
180
Foundations
190
Special
Purpose
Systems
200
Propulsion
Plant
220
Energy
Generating
System (Non-
Nuclear)
230
Propulsion
Units
240
Transmission
and Propulsor
Systems
250
Propulsion
Support Systems
(Except Fuel
and Lube Oil)
260
Propulsion
Support Systems
(Fuel and
Lube Oil)
290
Special Purpose
Systems
300
Electric
Plant
310
Electric
Power
Generation
320
Power
Distribution
Systems
330
Lighting
System
340
Power
Generation
Support
Systems
390
Special
Purpose
Systems
400
Command and
Surveillance
410
Command and
Control
Systems
420
Navigation
Systems
430
Interior
Communications
440
Exterior
Communications
450
Surveillance
Systems
(Surface)
460
Surveillance
Systems
(Underwater)
470
Countermeasures
480
Fire Control
Systems
490
Special
Purpose
Systems
500
Auxiliary
Systems
510
Climate
Control
520
Sea Water
Systems
530
Fresh Water
Systems
540
Fuels and
Lubricants,
Handling and
Storage
550
Air, Gas, and
Miscellaneous
Fluid Systems
560
Ship Control
Systems
570
Underway
Replenishment
Systems
580
Mechanical
Handling
Systems
590
Special
Purpose
Systems
600
Outfit and
Furnishings
610
Ship Fittings
620
Hull
Compartmenta-
tion
630
Preservatives
and Coverings
640
Living
Spaces
650
Service
Spaces
660
Working
Spaces
670
Stowage
Spaces
690
Special
Purpose
Systems
700
Armament
710
Guns and
Ammunition
720
Missiles and
Rockets
750
Torpedoes
760
Small Arms
and
Pyrotechnics
790
Special
Purpose
Systems
800
Integration/
Engineering
(Shipbuilder
Response)
810
Production
Engineering
830
Design
Support
840
Quality
Assurance
850
Integrated
Logistic
Support
890
Special
Purpose
Items
FF-1052 Class
Prepared 7-19-76
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
INDEX



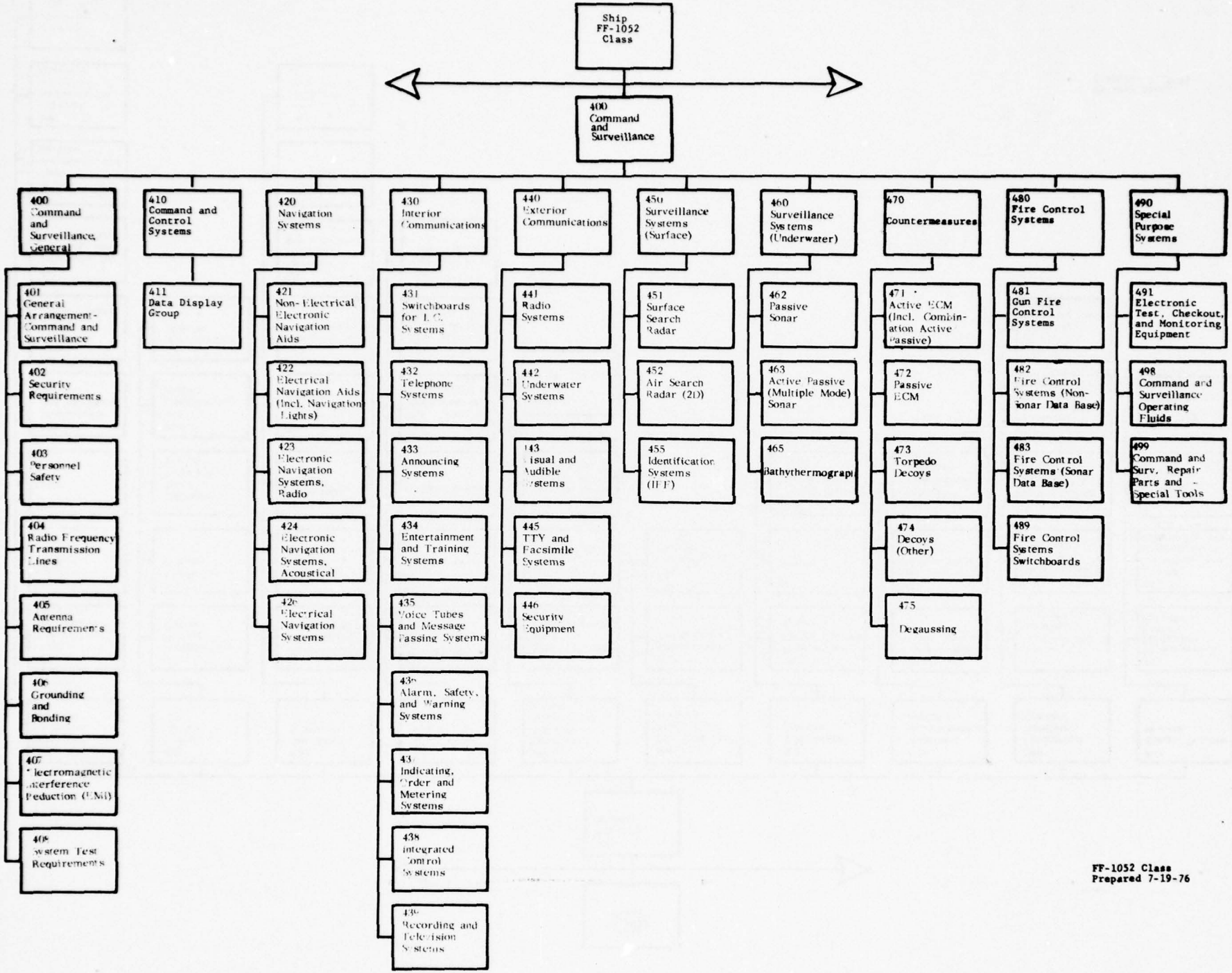
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Prepared 7-19-76



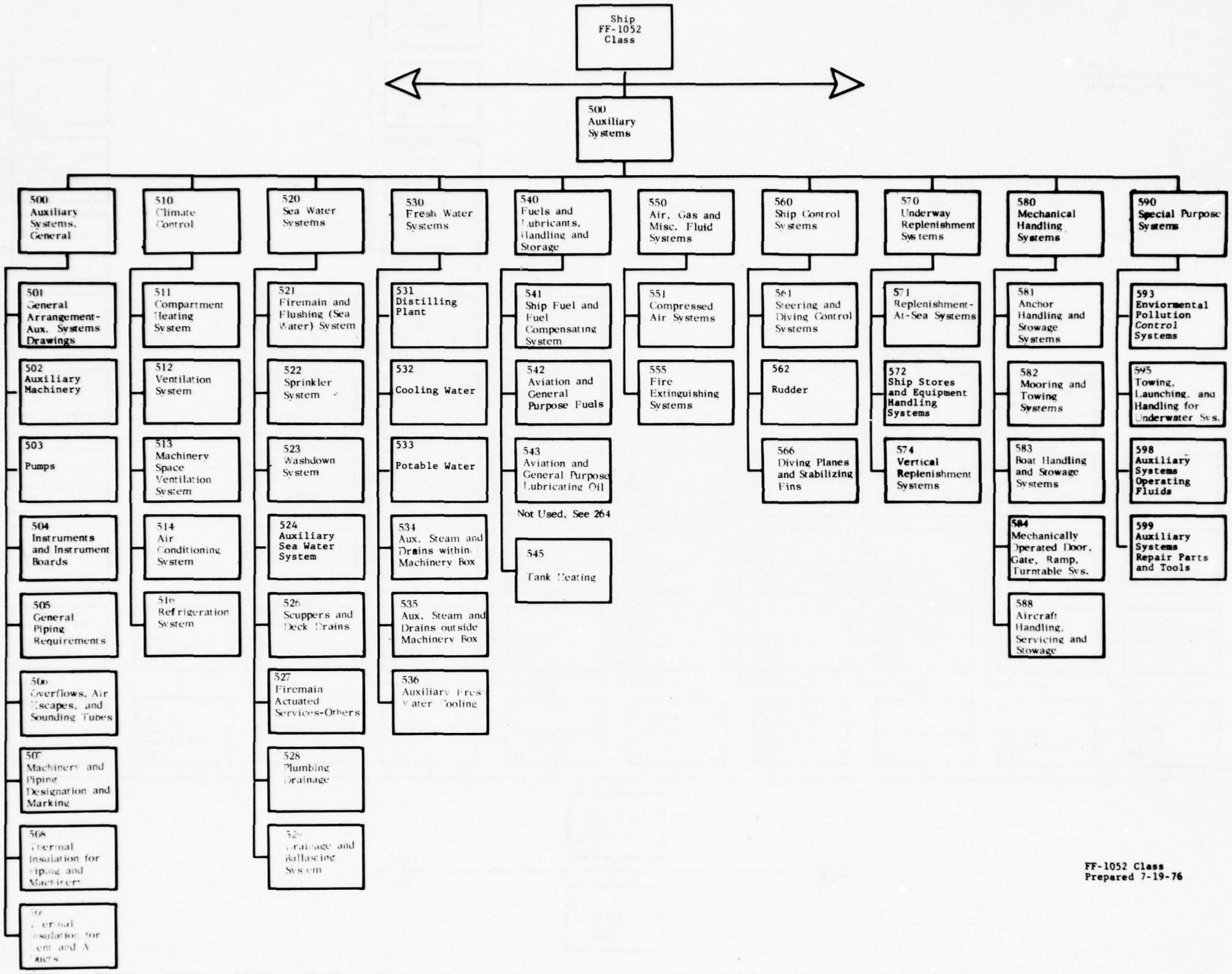
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Prepared 7-19-76

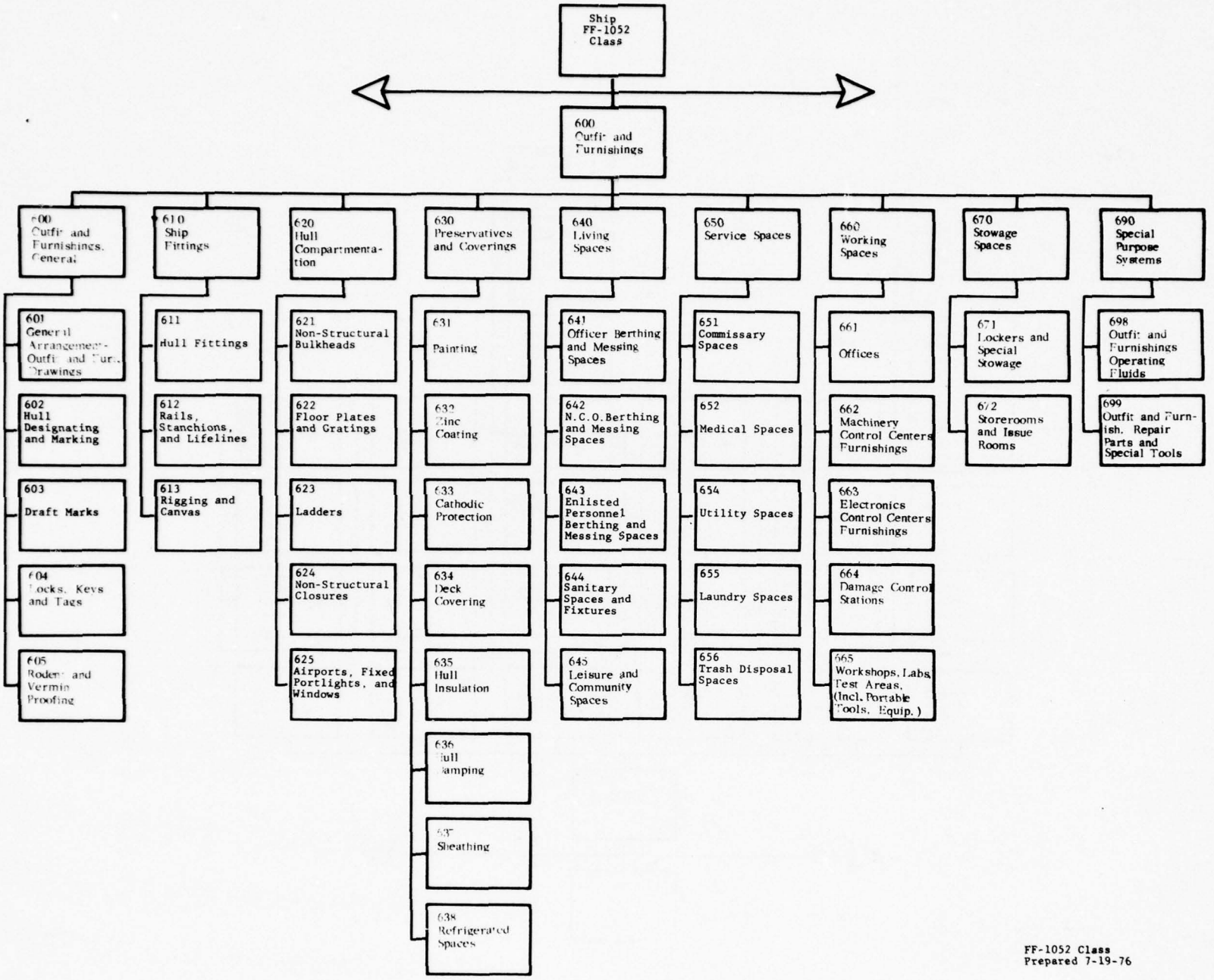


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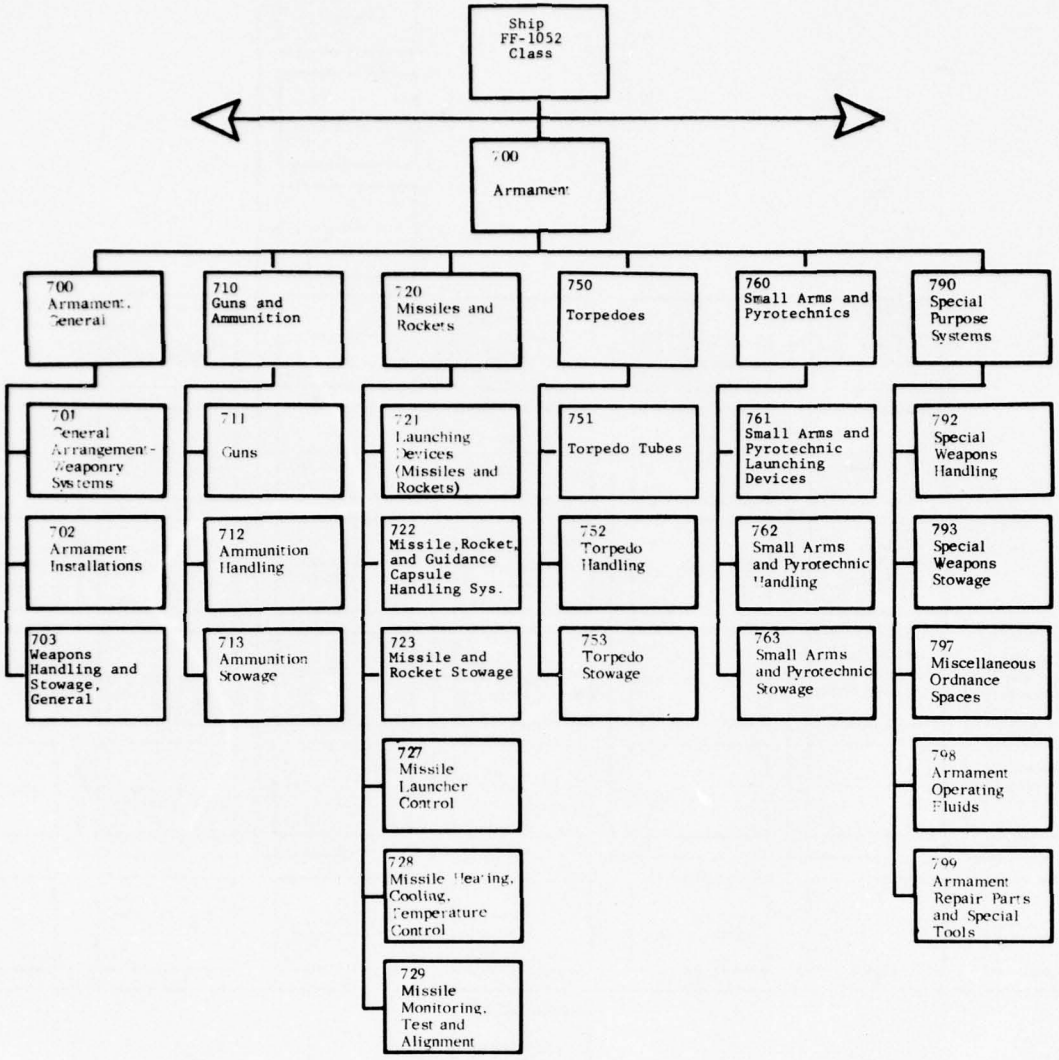


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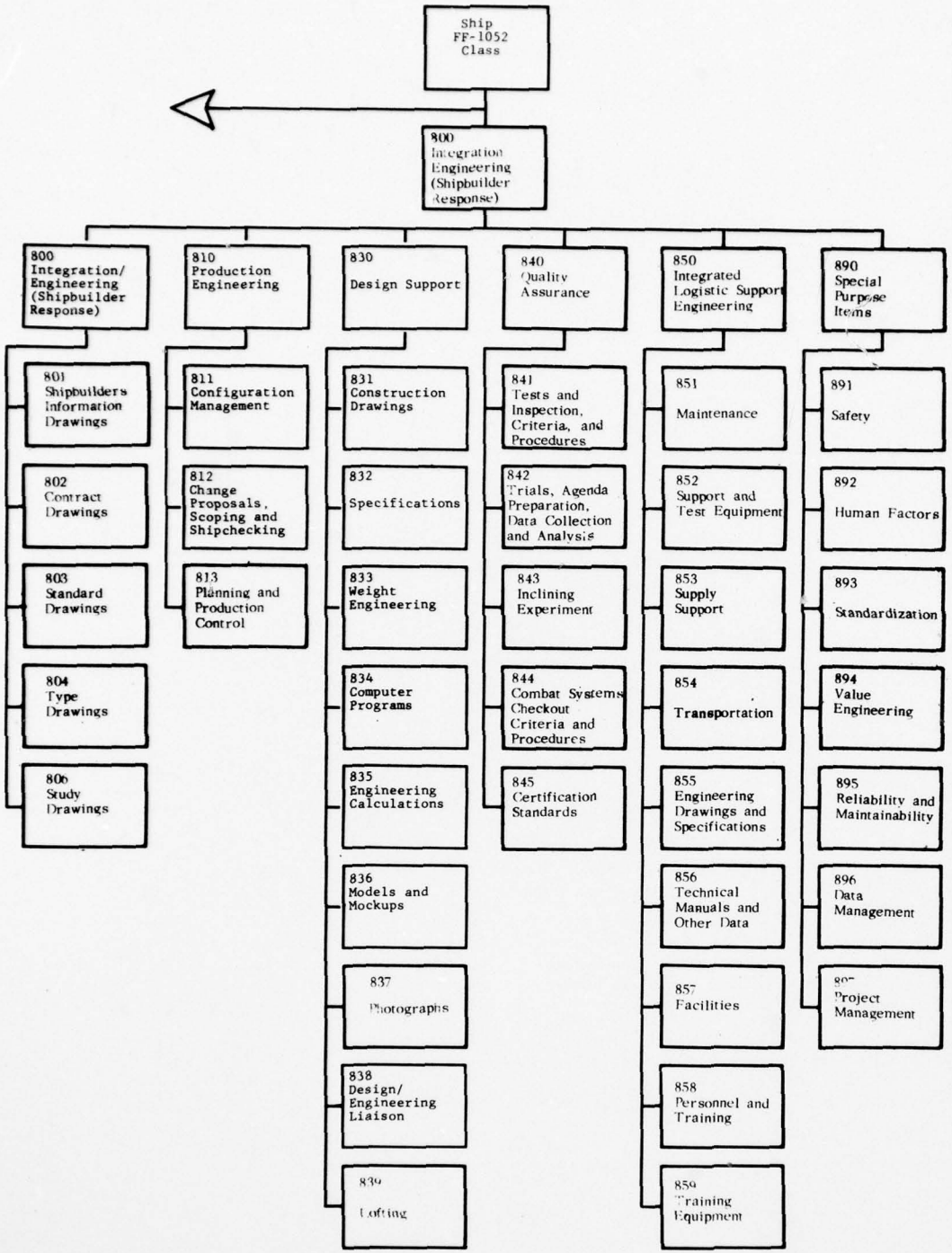

Ship
FF-1052
Class
500
Auxiliary
Systems
500
Auxiliary
Systems,
General
501
General
Arrangement-
Aux. Systems
Drawings
502
Auxiliary
Machinery
503
Pumps
504
Instruments
and Instrument
Boards
505
General
Piping
Requirements
506
Overflows, Air
Escapes, and
Sounding Tubes
507
Machinery and
Piping
Designation and
Marking
508
Thermal
Insulation for
Piping and
Machinery
510
Climate
Control
511
Compartment
Heating
System
512
Ventilation
System
513
Machinery
Space
Ventilation
System
514
Air
Conditioning
System
516
Refrigeration
System
520
Sea Water
Systems
521
Firemain and
Flushing (Sea
Water) System
522
Sprinkler
System
523
Washdown
System
524
Auxiliary
Sea Water
System
526
Scuppers and
Deck Drains
527
Firemain
Actuated
Services-Others
528
Plumbing
Drainage
530
Fresh Water
Systems
531
Distilling
Plant
532
Cooling Water
533
Potable Water
534
Aux. Steam and
Drains within
Machinery Box
535
Aux. Steam and
Drains outside
Machinery Box
536
Auxiliary Fresh
Water Cooling
540
Fuels and
Lubricants,
Handling and
Storage
541
Ship Fuel and
Fuel
Compensating
System
542
Aviation and
General
Purpose Fuels
543
Aviation and
General Purpose
Lubricating Oil
Not Used, See 264
545
Tank Heating
550
Air, Gas and
Misc. Fluid
Systems
551
Compressed
Air Systems
555
Fire
Extinguishing
Systems
560
Ship Control
Systems
561
Steering and
Diving Control
Systems
562
Rudder
566
Diving Planes
and Stabilizing
Fins
570
Underway
Replenishment
Systems
571
Replenishment-
At-Sea Systems
572
Ship Stores
and Equipment
Handling
Systems
574
Vertical
Replenishment
Systems
580
Mechanical
Handling
Systems
581
Anchor
Handling and
Stowage
Systems
582
Mooring and
Towing
Systems
583
Boat Handling
and Stowage
Systems
584
Mechanically
Operated Door,
Gate, Ramp,
Turntable Sys.
588
Aircraft
Handling,
Servicing and
Stowage
590
Special Purpose
Systems
593
Enviormental
Pollution
Control
Systems
595
Towing,
Launching, and
Handling for
Underwater Sys.
598
Auxiliary
Systems
Operating
Fluids
599
Auxiliary
Systems
Repair Parts
and Tools
FF-1052 Class
Prepared 7-19-76



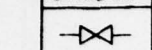
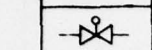
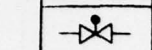
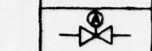
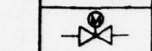
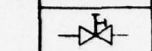
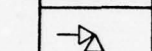
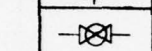
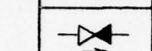
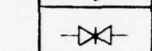
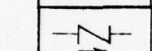
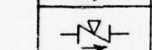
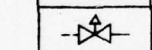
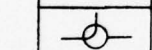
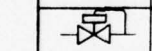
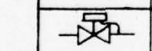
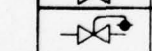
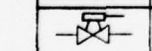
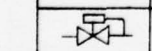
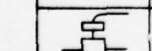
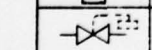
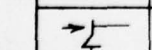
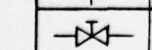
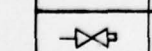
FF-1052 Class
Prepared 7-19-76



FF-1052 Class
Prepared 7-19-76



FF-1052 Class
Prepared 7-19-76

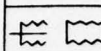
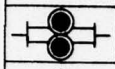
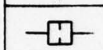
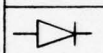
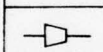
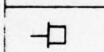
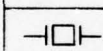
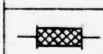
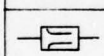
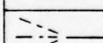
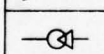
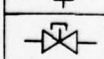
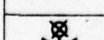
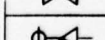
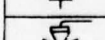
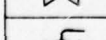
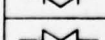
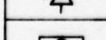
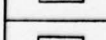
LEGEND OF SYMBOLS	
SYMBOL	DESCRIPTION
	GLOBE VALVE
	GLOBE VALVE, LOCKED OPEN
	GLOBE VALVE, LOCKED CLOSED
	GLOBE VALVE, MANUALLY OPERATED IN PLACE OR PNEUMATICALLY FROM MAIN DECK
	AIR MOTOR OPERATED VALVE
	GLOBE VALVE, WITH MANUAL GEAR OPERATED IN PLACE AND AJACENT SPACE
	GLOBE VALVE, ANGLE
	GLOBE VALVE, REMOTE OPERATED
	GLOBE STOP CHECK VALVE
	GATE VALVE
	BUTTERFLY VALVE
	SWING CHECK VALVE
	LIFT CHECK VALVE
	NEEDLE VALVE
	STOP COCK PLUG OR CYLINDER VALVE 3 WAY, 2 PORT
	CONTROLLED VALVE, BOILER FEED
	PRESSURE REDUCING OR PRESSURE REGULATING INCREASED ACTUATING PRESSURE CLOSES
	PRESSURE REDUCING OR PRESSURE REGULATING DECREASED ACTUATING PRESSURE CLOSES
	PRESSURE REGULATING VALVE AIR PILOT OPERATED
	PUMP GOVERNOR
	THERMOSTATICALLY CONTROLLED VALVE
	DUMP VALVE
	PILOT VALVE
	FLOAT OPERATED VALVE
	ANGLE LIFT CHECK VALVE
	CONTROL VALVE
	HOSE CONNECTION AND GLOBE VALVE

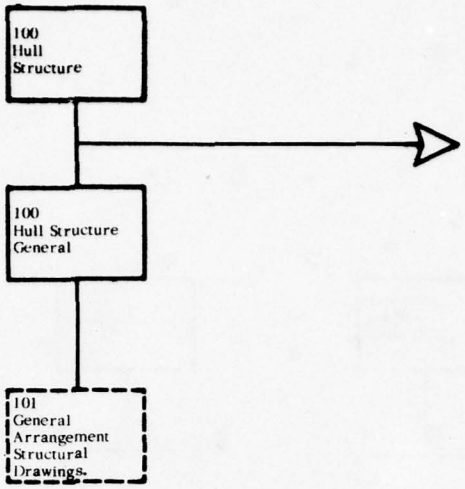
NOTE: VALVES OTHER THAN THE GLOBE VALVE MAY USE THE MODIFIERS SHOWN. IN ADDITION COMBINATIONS OF VALVE MODIFIERS MAY BE USED.

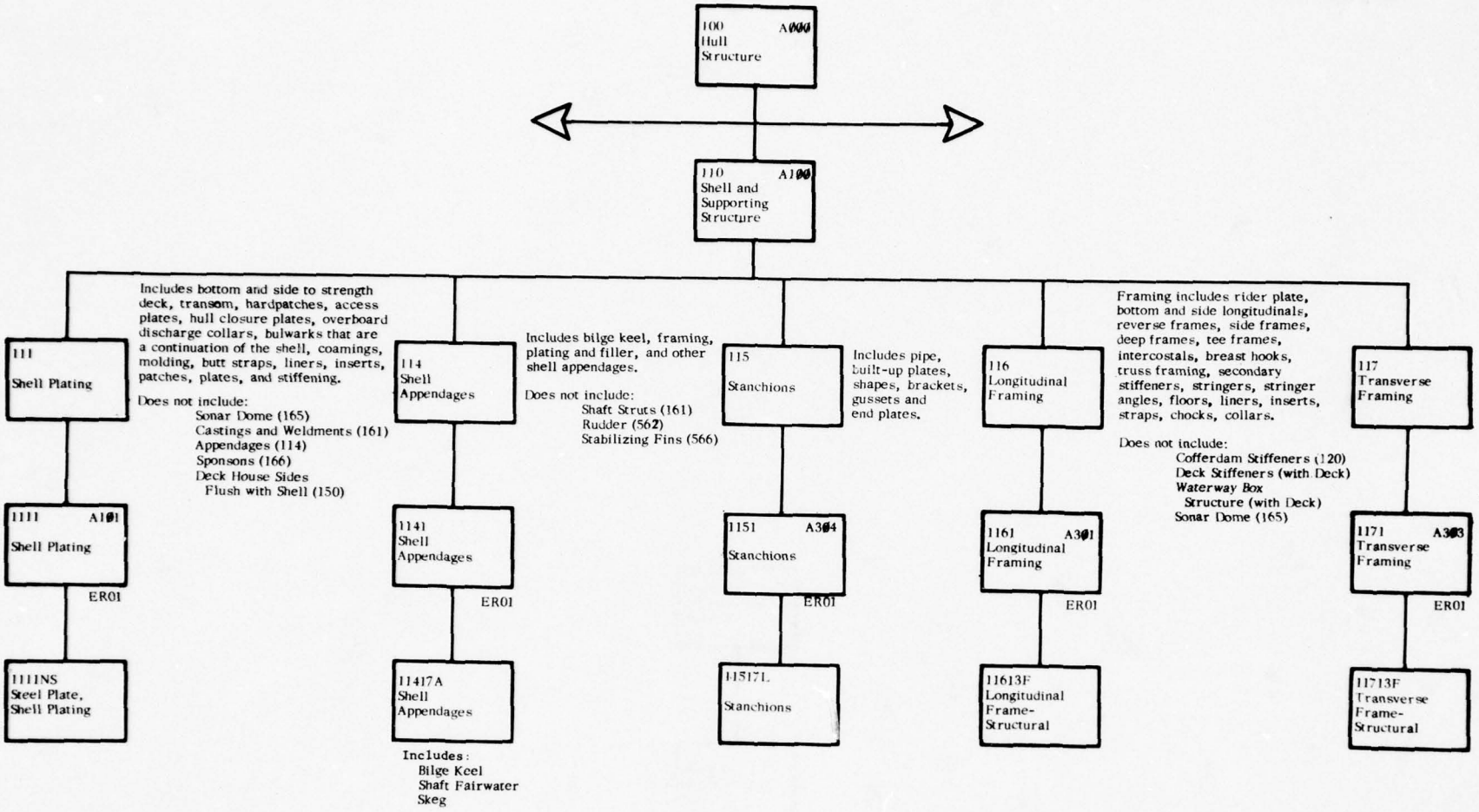
LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
	VENT
	BOILER DRUM SAFETY VALVE
	ANGLE RELIEF VALVE (ENCLOSED SPRING)
	COMBINED EXHAUST AND RELIEF VALVE
	PRESSURE GAUGE
	VACUUM - PRESSURE GAUGE
	DUPLEX PRESSURE GAUGE
	ABSOLUTE PRESSURE GAUGE
	DISTANT READING PRESSURE GAUGE
	DISTANT READING THERMOMETER
	SIGHT READING THERMOMETER
	THERMO ELEMENT
	METER, SIGHT FLOW
	PRESSURE BREAKDOWN ORIFICE
	OPEN FUNNEL
	SPECTACLE FLANGE
	DUPLEX STRAINER
	Y STRAINER
	STRAINER
	IMPULSE TRAP & STRAINER
	SALINITY CELL
	ORIFICE PLATE
	MOTOR CONTROLLER
	TEST TEE
	DESUPERHEATER
	MANIFOLD
	EDUCTOR

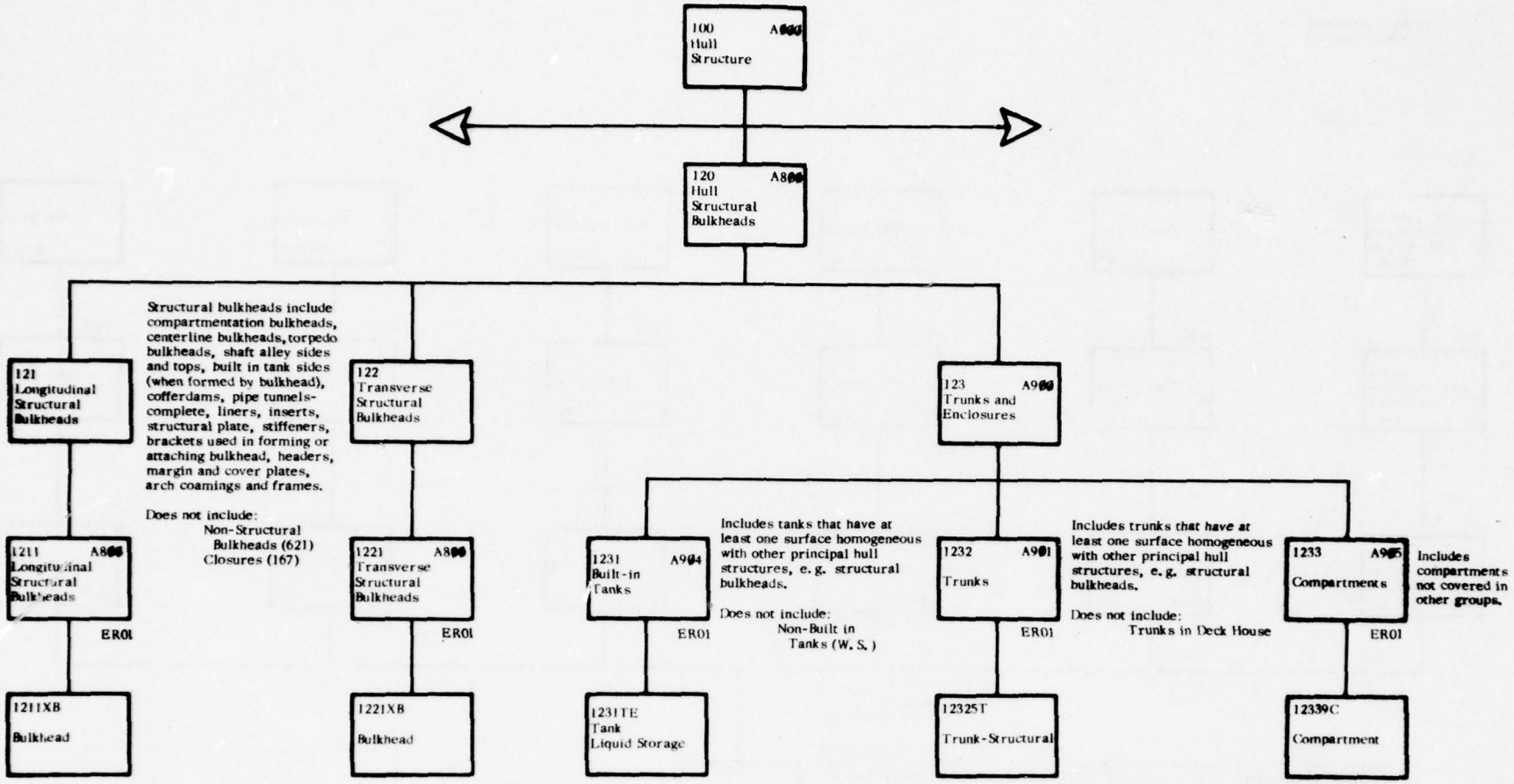
LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
	PUSHBUTTON & INDICATOR LIGHT
	PUSHBUTTON
	EXPANSION JOINT
	GAGE GLASS
	DUPLEX (TWIN BASKET) MAGNETIC STRAINER
	THERMOCOUPLE CONNECTION OR THERMOSTAT
	THERMOMETER ANY ANGLE DIAL, BARE BULB TYPE DIRECT READING
	THERMOMETER DISTANT READING BARE BULB TYPE
	CONSTANT FLOW FITTING
	FUNNEL WITH SWING COVER
	CONCENTRIC REDUCER
	REDUCER
	HOSE ADAPTER
	SOUND ISOLATION FITTING
	FLEXIBLE HOSE
	FLOW MEASURING NOZZLE
	SHAFT TURBINE END, COUPLING OIL SPRAY
	ANGLE STOP VALVE
	BALL CHECK STOP VALVE
	PRESSURE VENT
	LOCK SHIELD VALVE, HIGH LIFT
	BOTTOM BLOWDOWN VALVE, HIGH LIFT
	TOP BLOWDOWN VALVE, HIGH LIFT
	AIR OPERATED VALVE SPRING CLOSING
	AUTOMATIC RECIRCULATING VALVE
	CROSS VALVE
	MOTOR PRESSURE SWITCH
	LIMIT SWITCHES

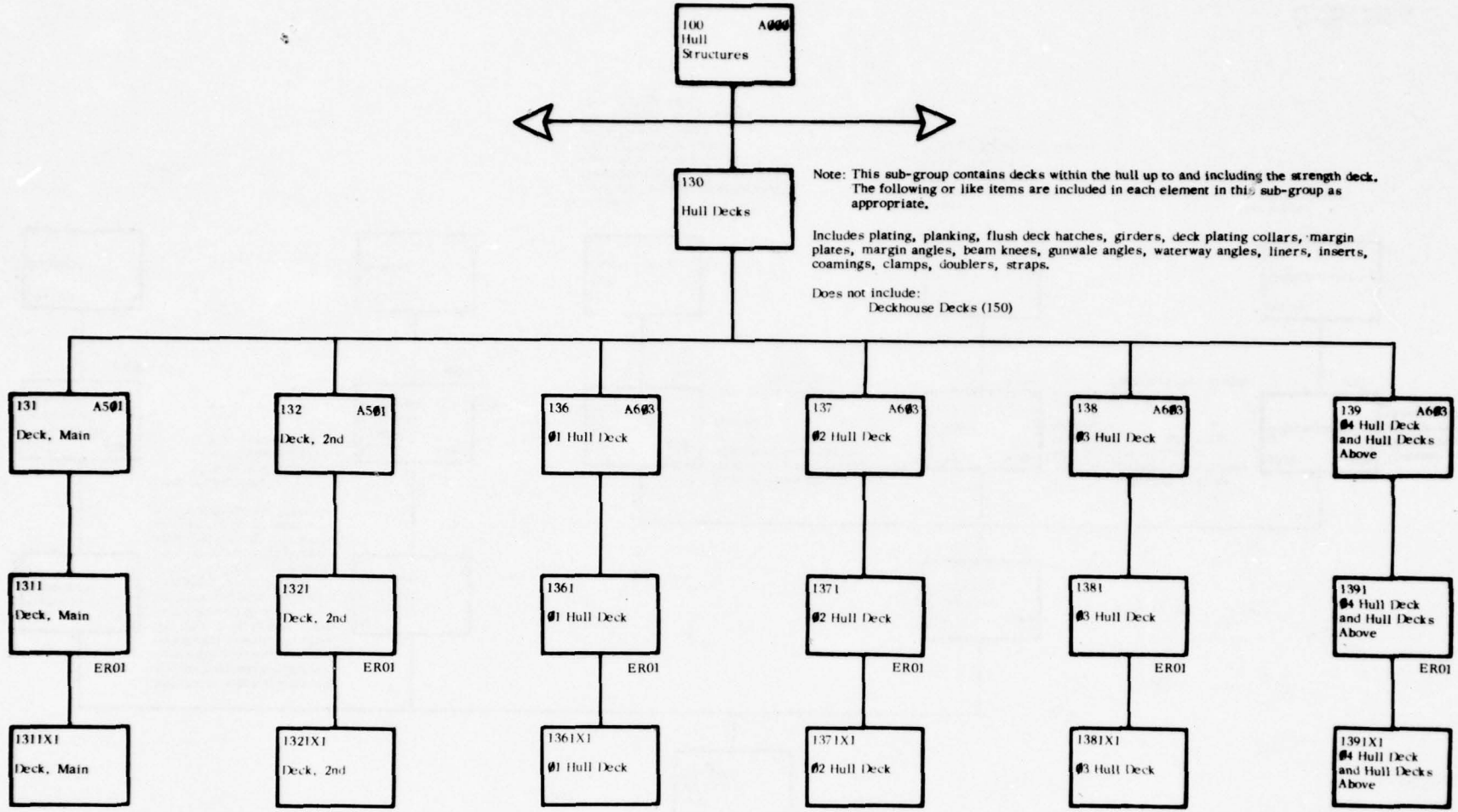

100
Hull
Structure
100
Hull Structure
General
101
General
Arrangement
Structural
Drawings.



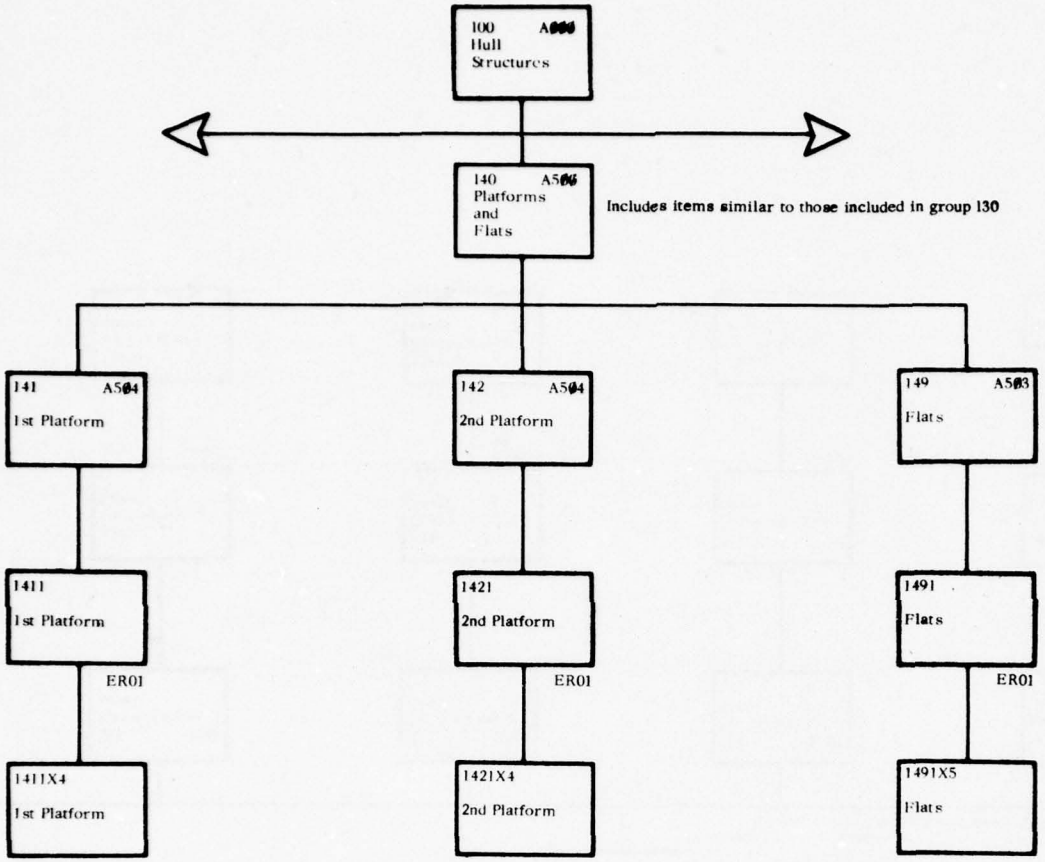
FF-1052 Class
Prepared 7-19-76



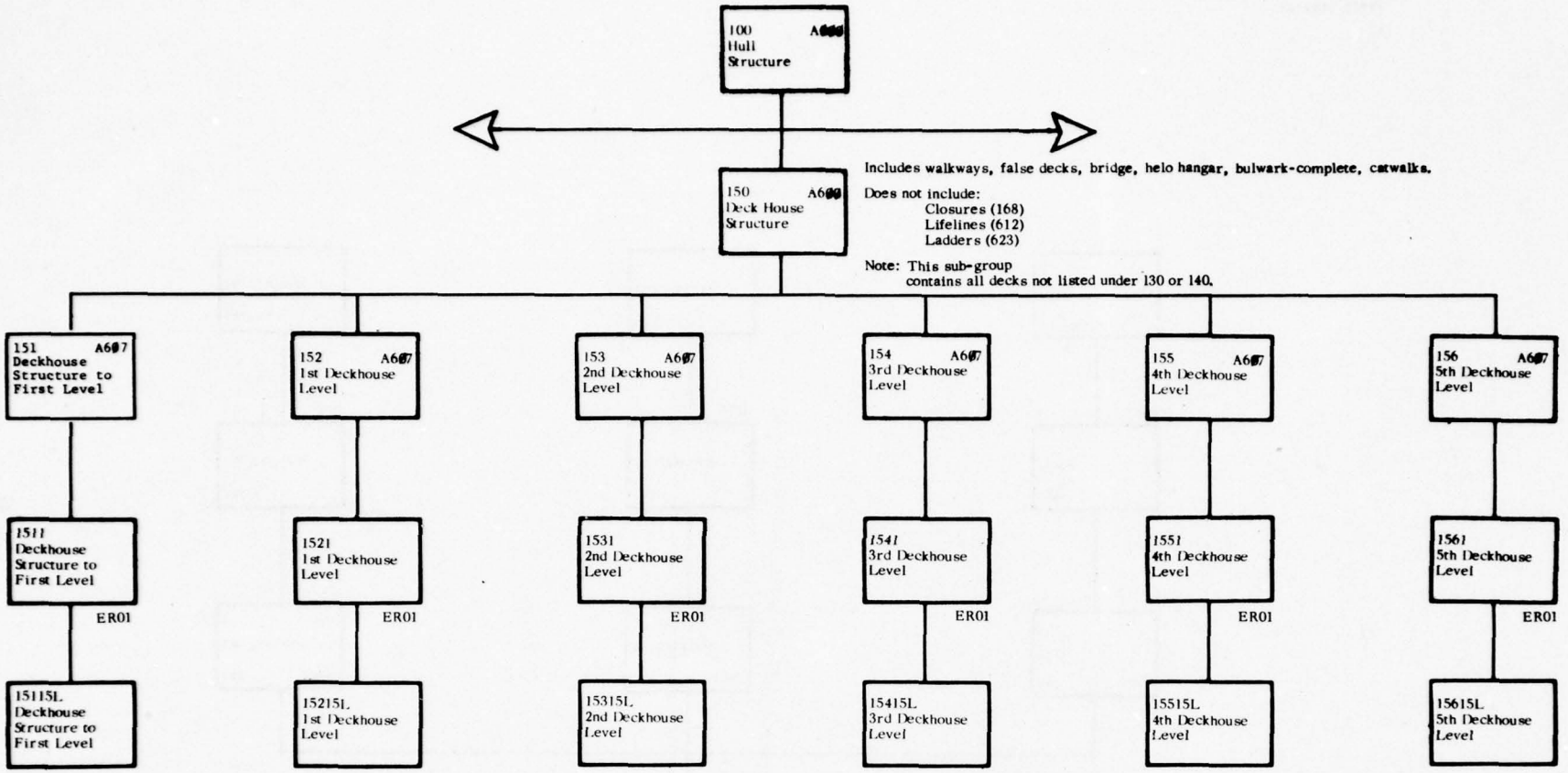
FF-1052 Class
Prepared 7-19-76



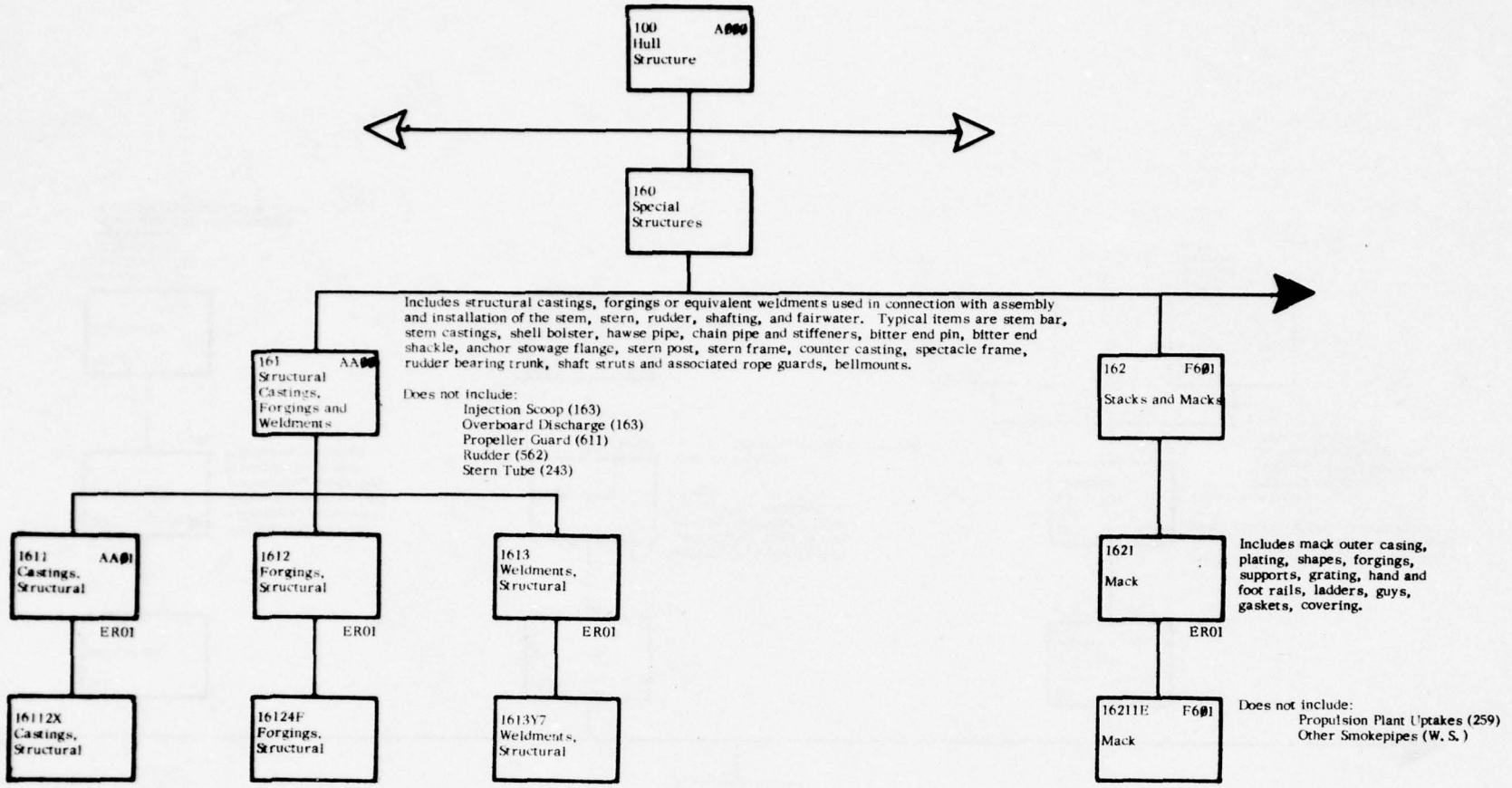
FF-1052 Class
Prepared 7-19-76



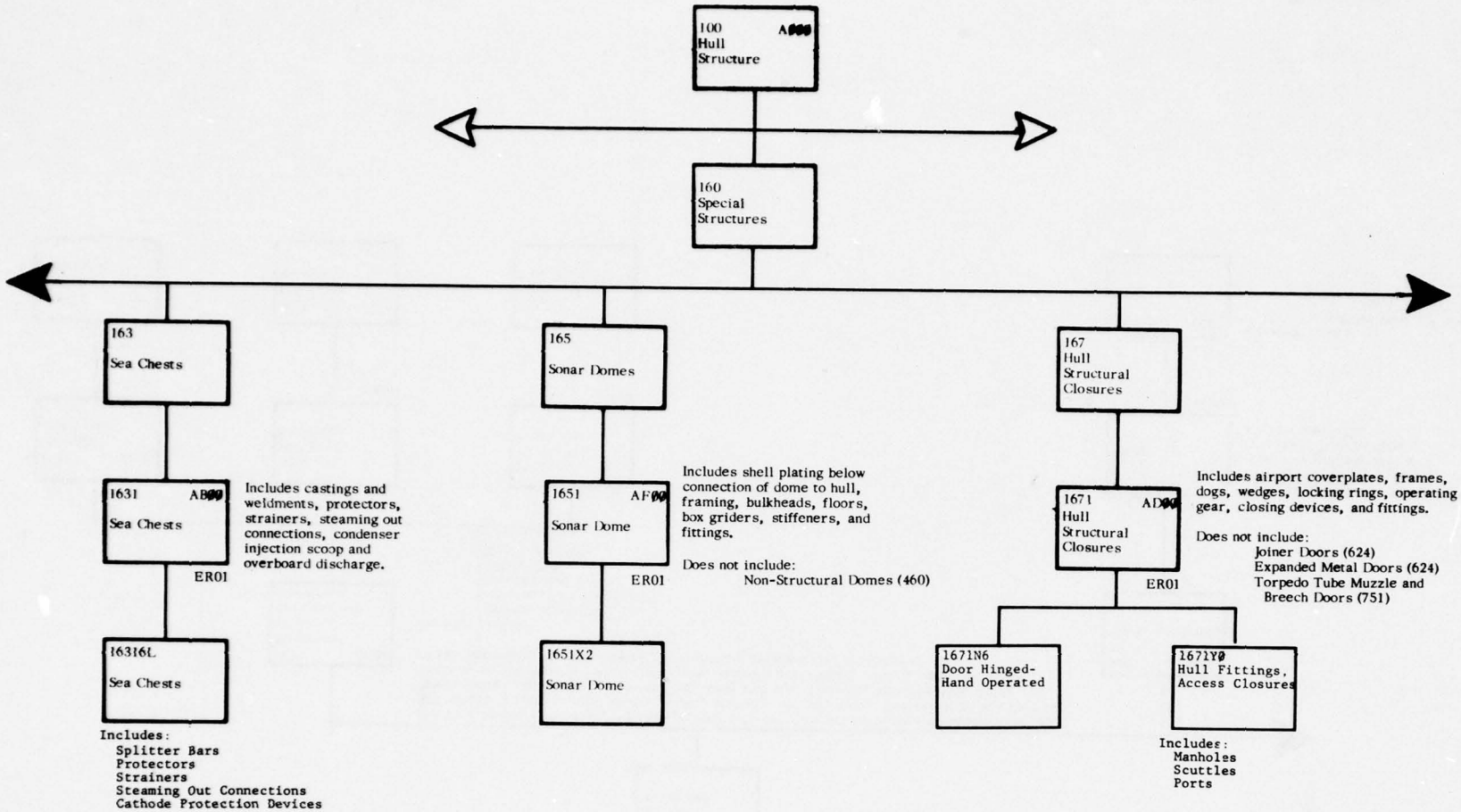
FF-1052 Class
Prepared 7-19-76



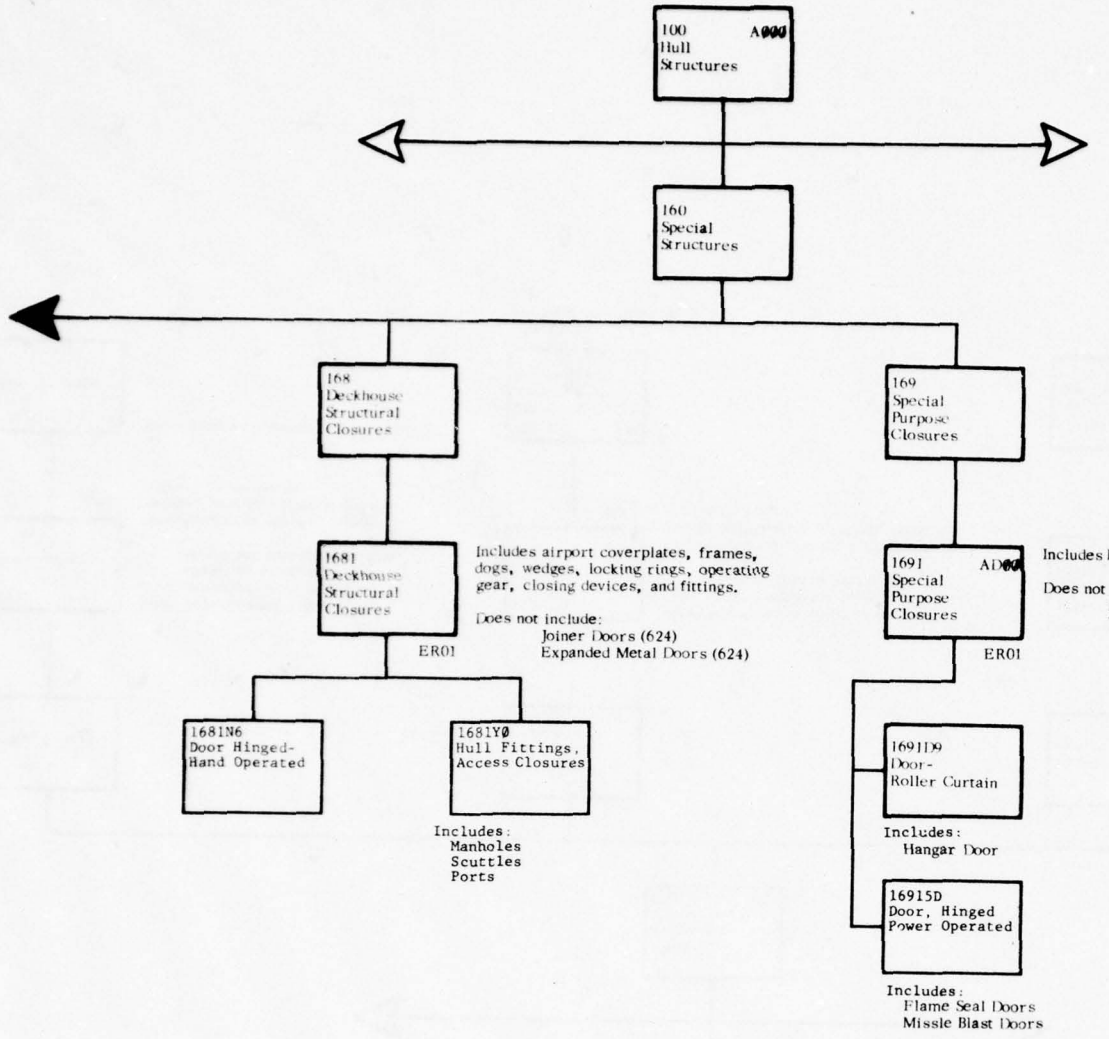
FF-1052 Class
Prepared 7-19-76



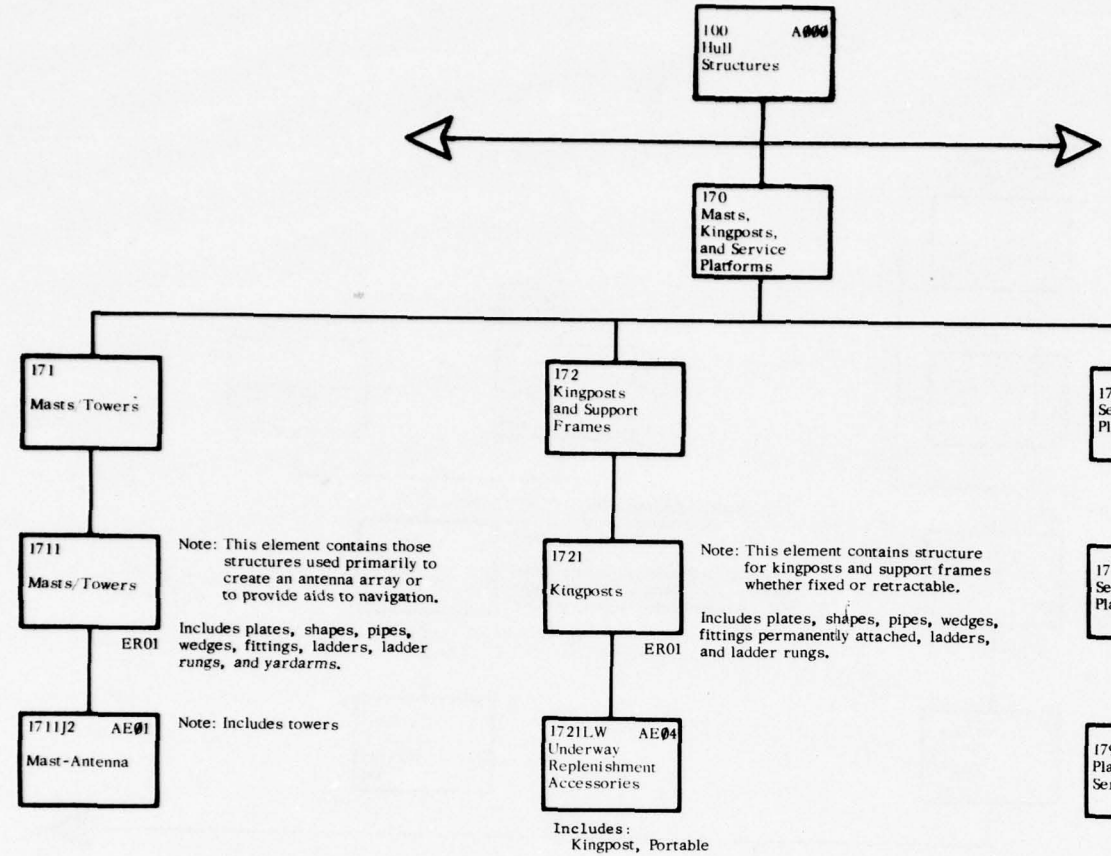
FF-1052 Class
Prepared 7-19-76



FF-1052 Class
Prepared 7-19-76



FF-1052 Class
Prepared 7-19-76



Note: This element contains those structures used primarily to create an antenna array or to provide aids to navigation.

Includes plates, shapes, pipes, wedges, fittings, ladders, ladder rungs, and yardarms.

Note: Includes towers

Note: This element contains structure for kingposts and support frames whether fixed or retractable.

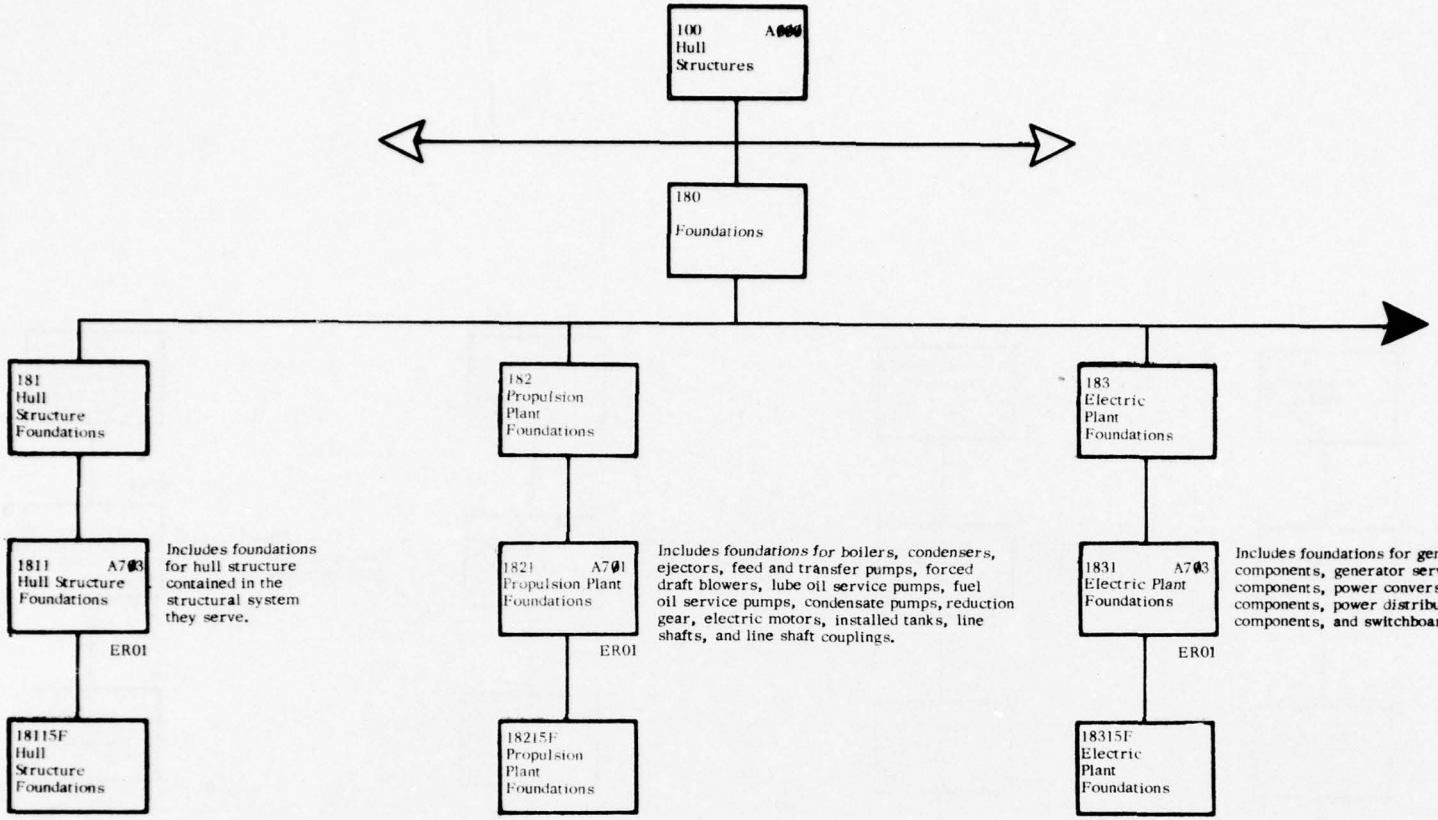
Includes plates, shapes, pipes, wedges, fittings permanently attached, ladders, and ladder rungs.

Includes:
Kingpost, Portable

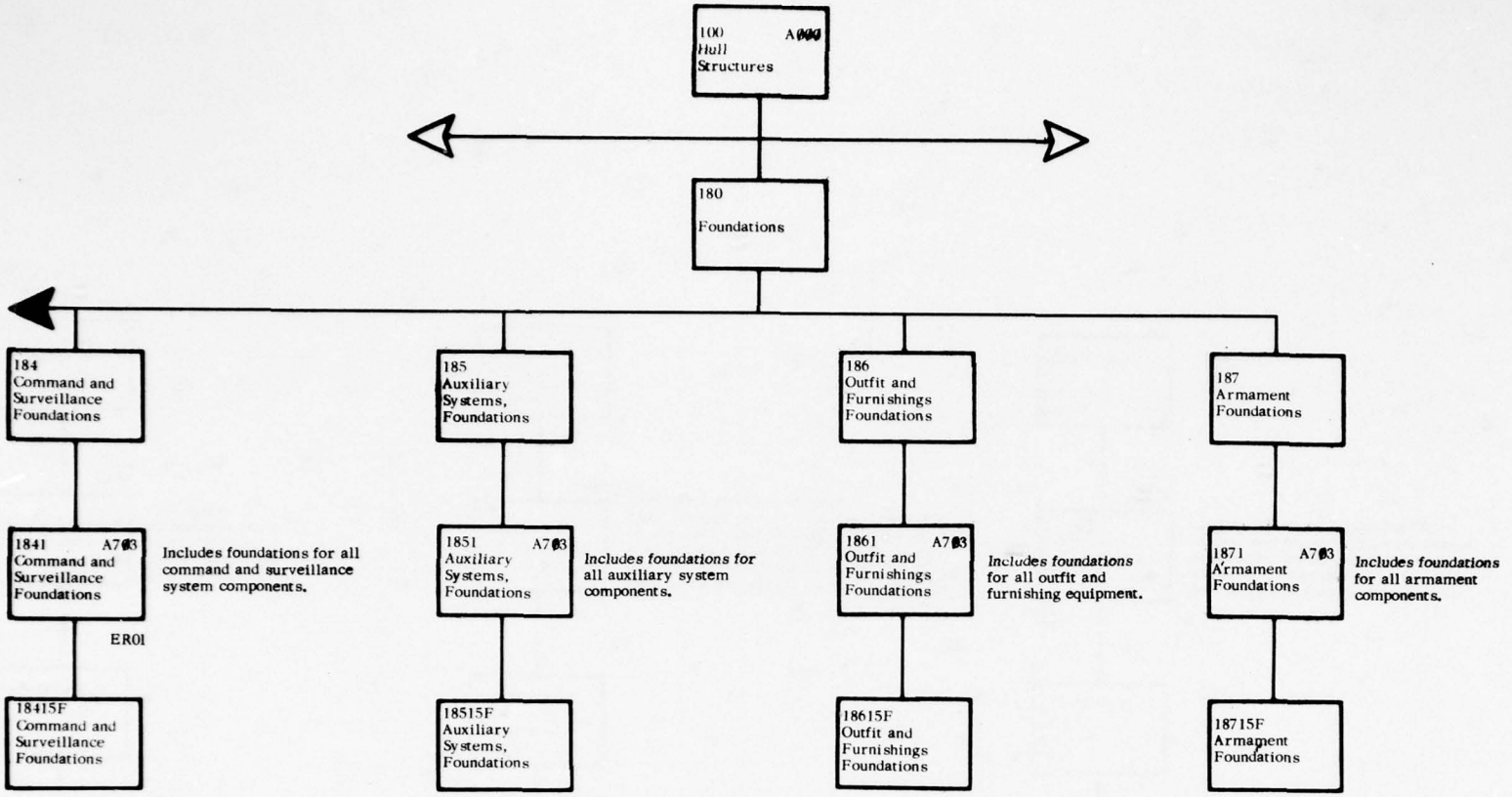
Note: This element contains all service platforms located on structure *included in this sub group (170).*

Includes plates, grating, shapes, pipes, brackets, handrails, and foot rails.

FF-1052 Class
Prepared 7-19-76



FF-1052 Class
Prepared 7-19-76



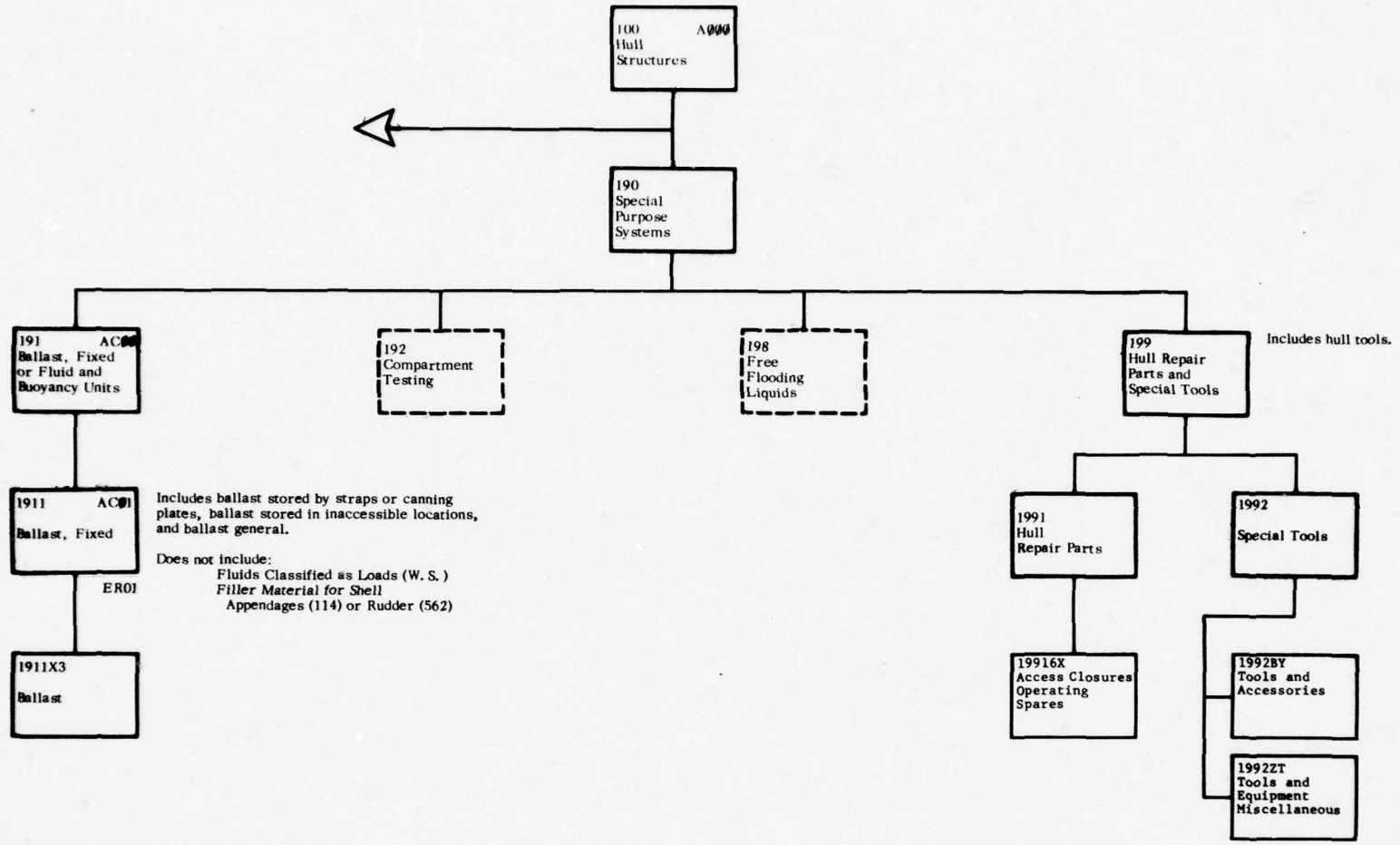
Includes foundations for all command and surveillance system components.

Includes foundations for all auxiliary system components.

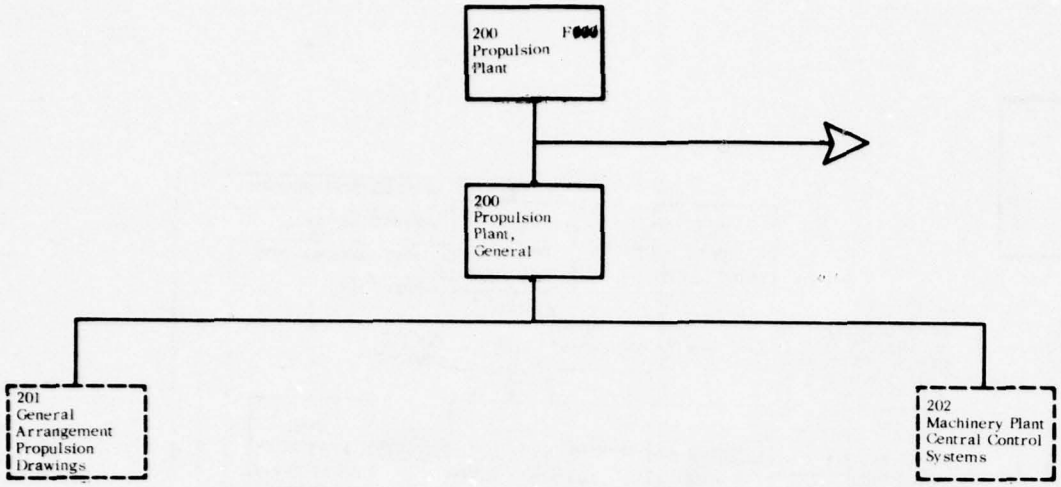
Includes foundations for all outfit and furnishing equipment.

Includes foundations for all armament components.

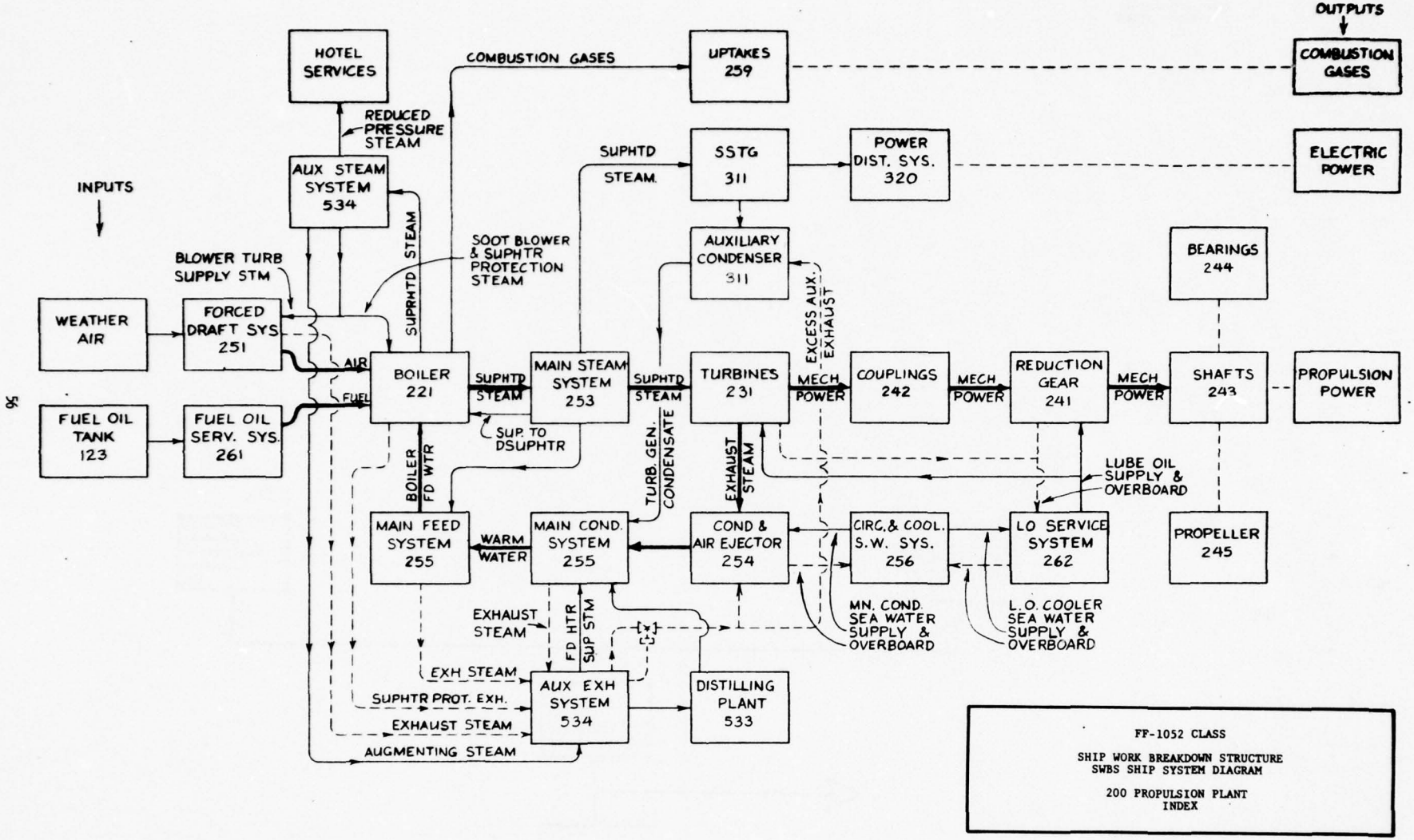
FF-1052 Class
Prepared 7-19-76

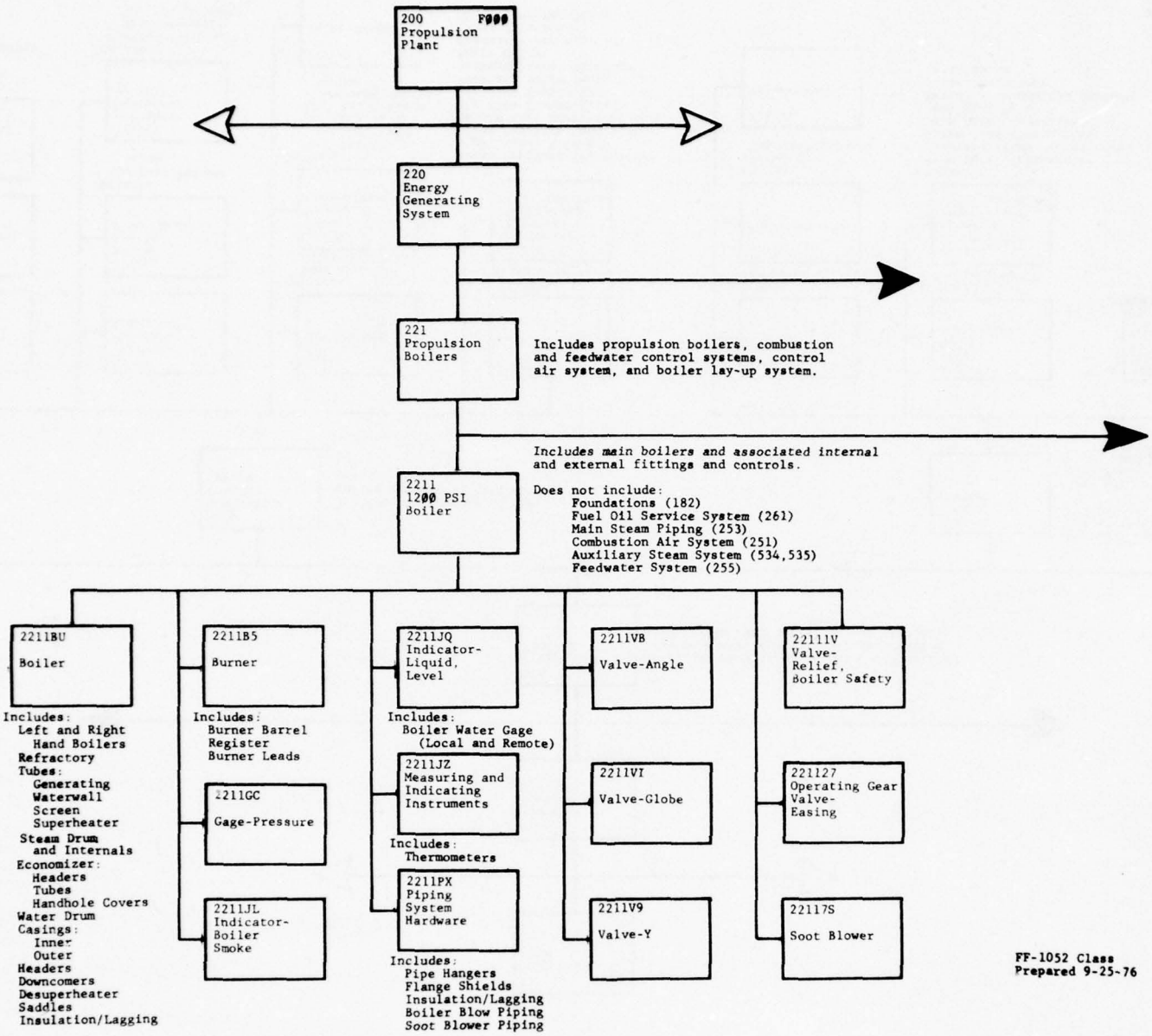


FF-1052 Class
Prepared 7-19-76

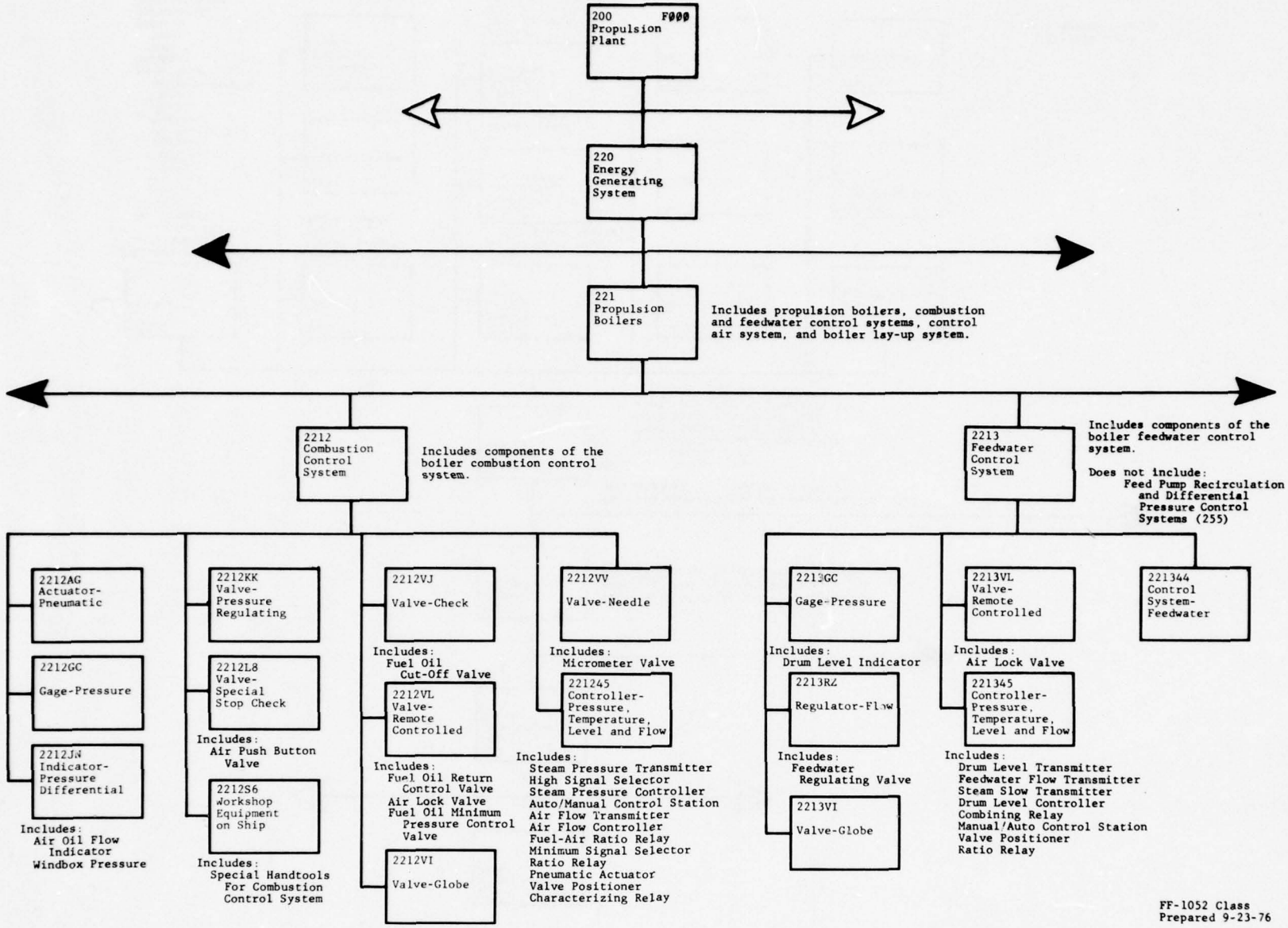


FF-1052 Class
Prepared 7-19-76

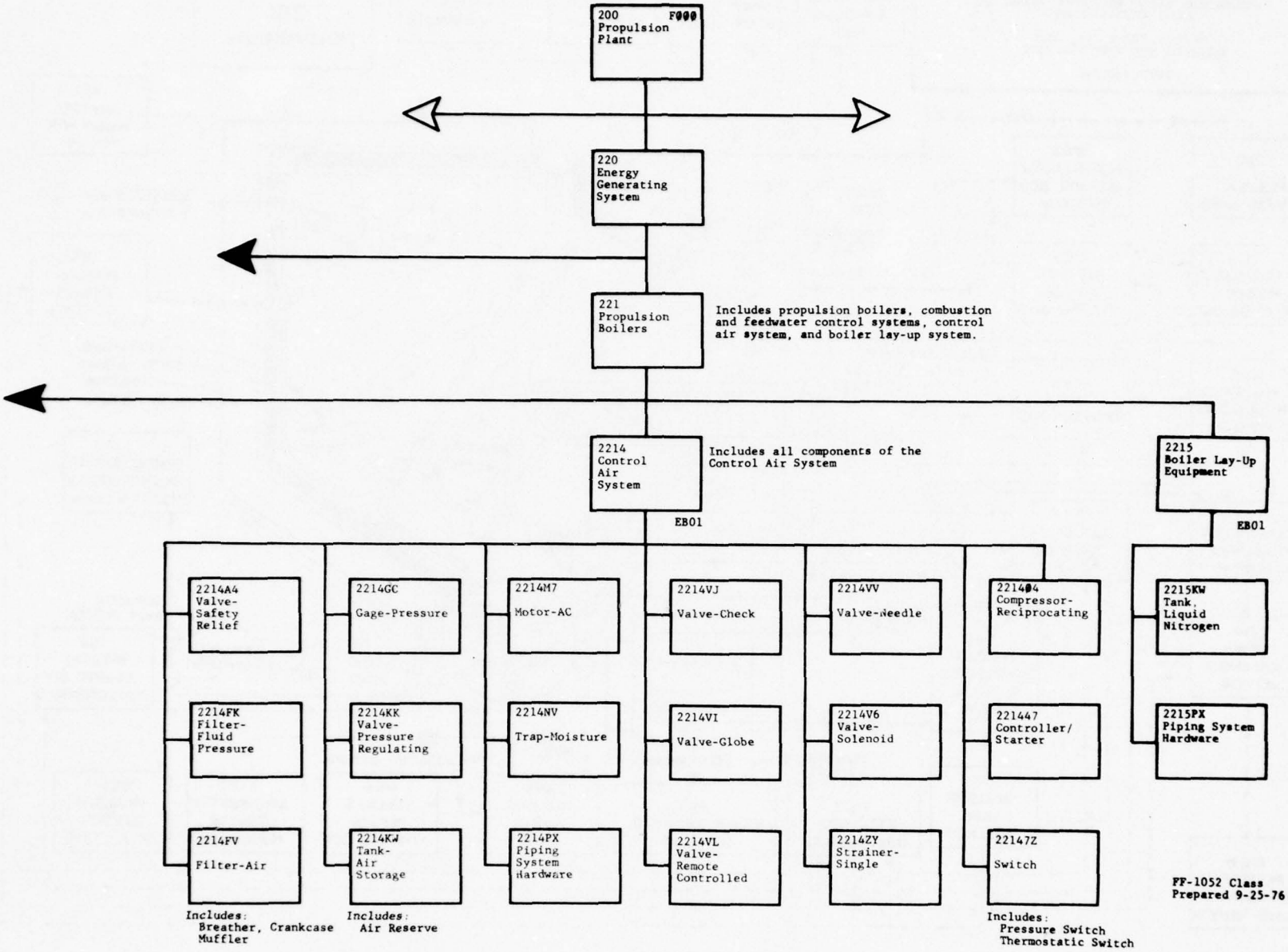

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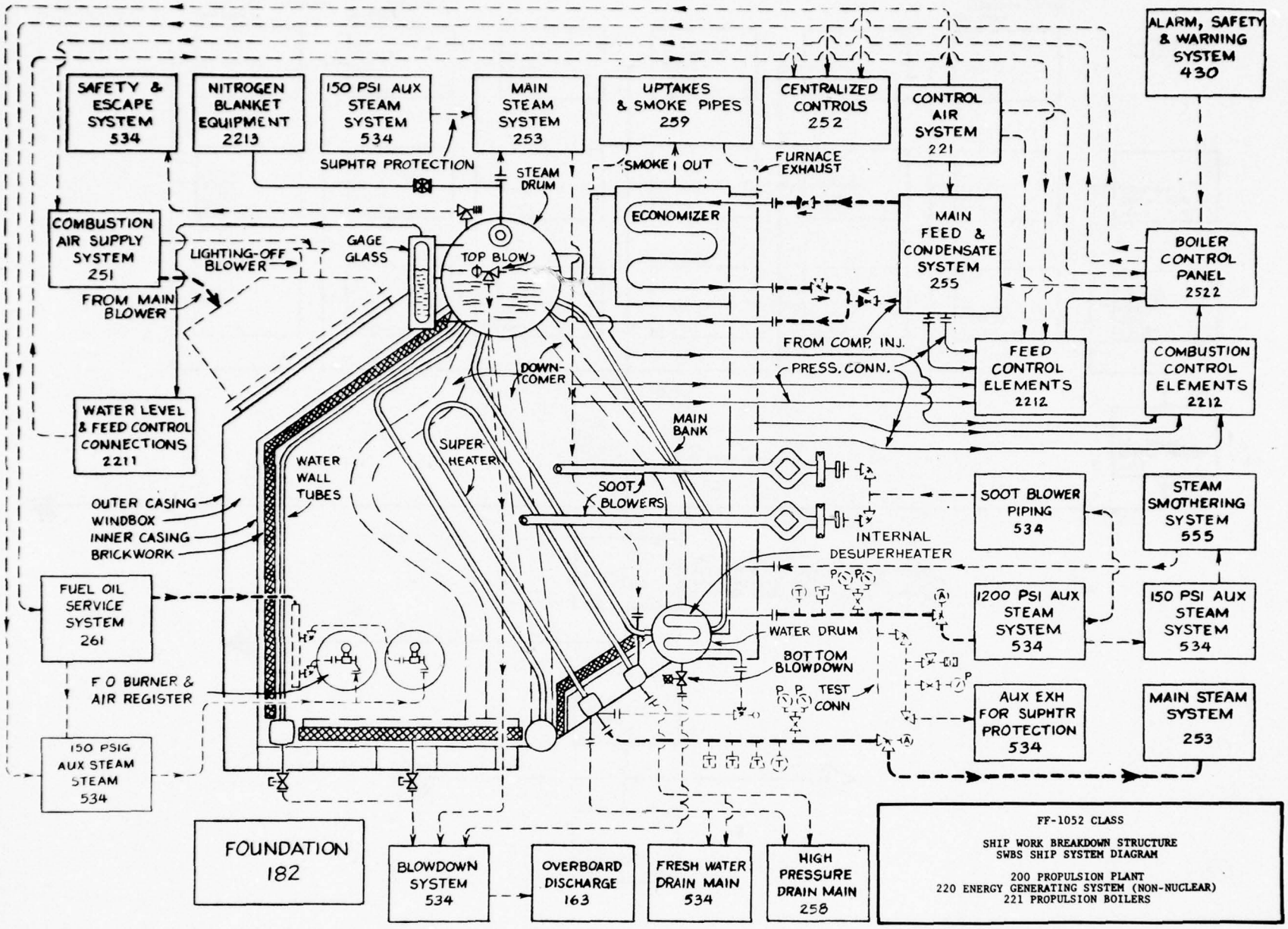


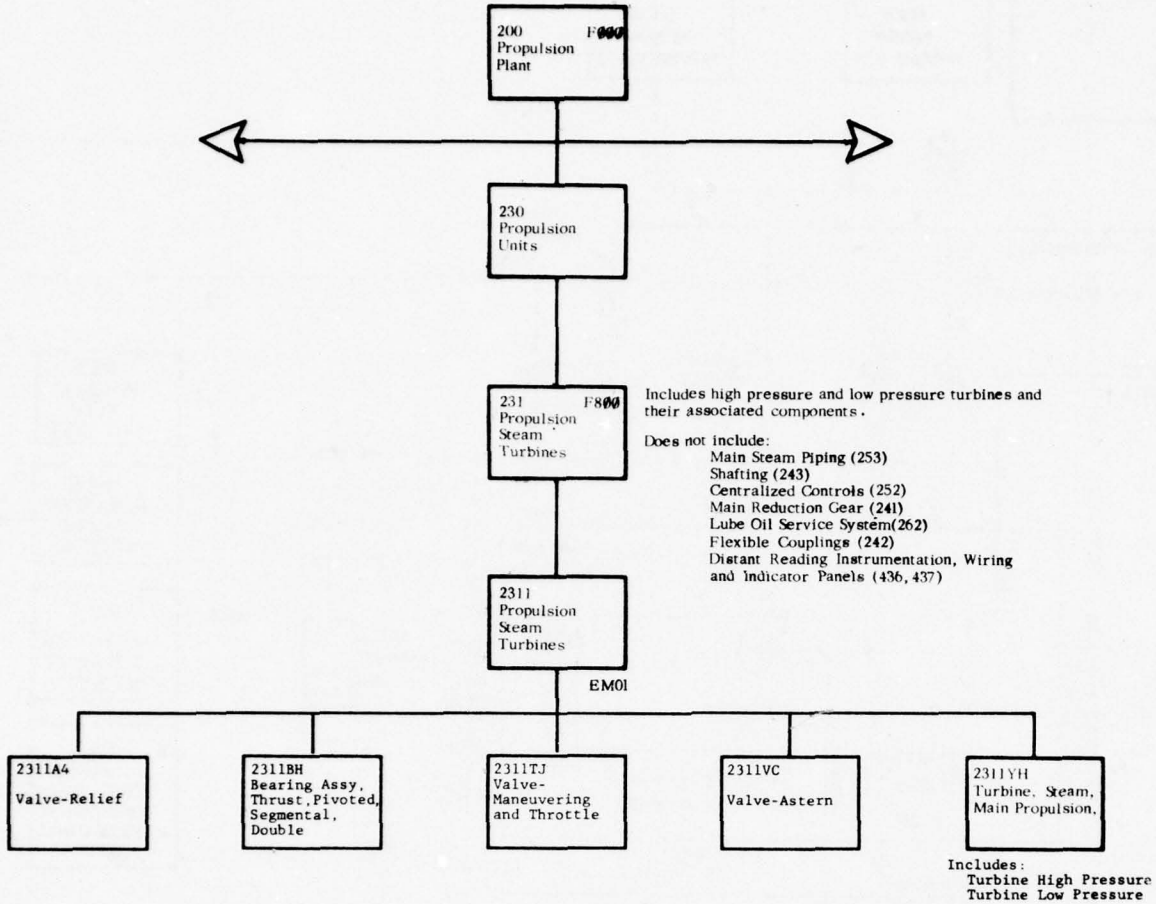
FF-1052 Class
Prepared 9-25-76



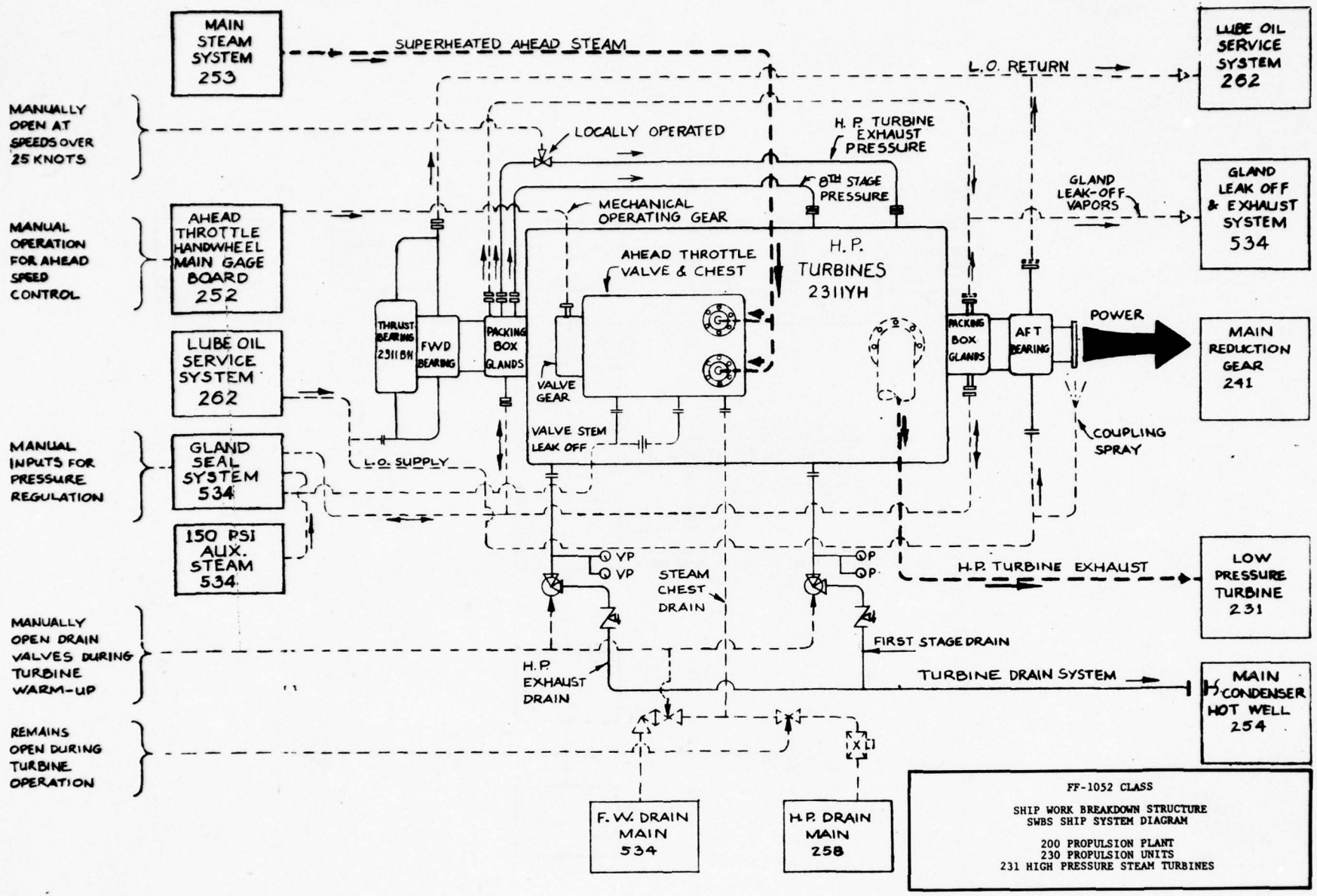
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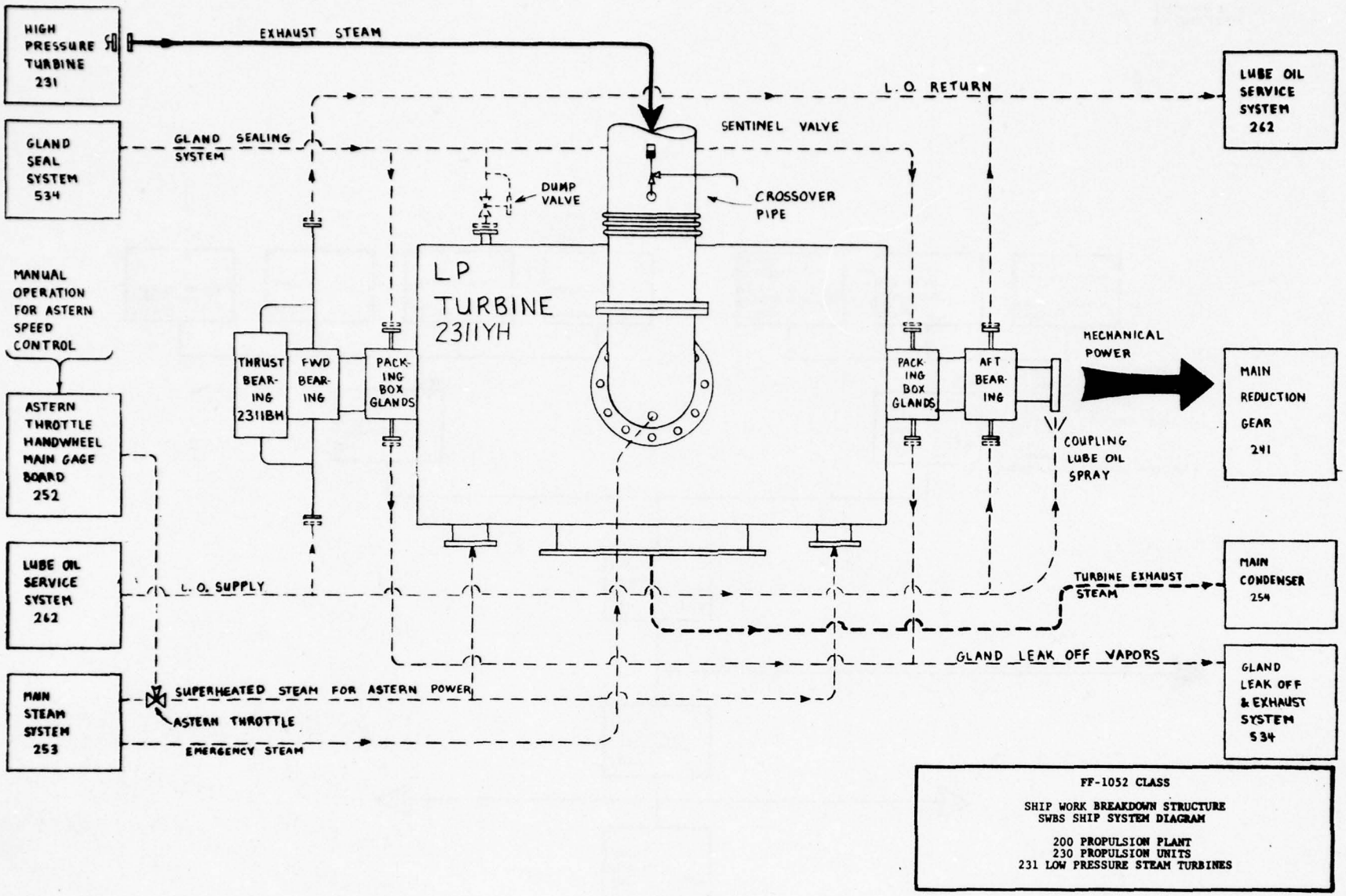

200 F000
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220
Energy Generating System
221
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2214VV Valve-Needle
221404 Compressor-Reciprocating
2215KW Tank, Liquid Nitrogen
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2214KK Valve-Pressure Regulating
2214NV Trap-Moisture
2214VI Valve-Globe
2214V6 Valve-Solenoid
221447 Controller/ Starter
2215PX Piping System Hardware
2214FV Filter-Air
2214KW Tank-Air Storage
2214PX Piping System Hardware
2214VL Valve-Remote Controlled
2214ZY Strainer-Single
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BOILER CONTROL PANEL 2522
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FROM COMP. INJ.
PRESS. CONN.
FEED CONTROL ELEMENTS 2212
COMBUSTION CONTROL ELEMENTS 2212
DOWN-COMER
WATER LEVEL & FEED CONTROL CONNECTIONS 2211
MAIN BANK
SUPER HEATER
WATER WALL TUBES
SOOT BLOWERS
SOOT BLOWER PIPING 534
STEAM SMOTHERING SYSTEM 555
OUTER CASING
WINDBOX
INNER CASING
BRICKWORK
INTERNAL DESUPERHEATER
FUEL OIL SERVICE SYSTEM 261
1200 PSI AUX STEAM SYSTEM 534
150 PSI AUX STEAM SYSTEM 534
WATER DRUM
BOTTOM BLOWDOWN
F O BURNER & AIR REGISTER
P P TEST CONN
AUX EXH FOR SUPHTR PROTECTION 534
MAIN STEAM SYSTEM 253
150 PSIG AUX STEAM STEAM 534
FOUNDATION 182
BLOWDOWN SYSTEM 534
OVERBOARD DISCHARGE 163
FRESH WATER DRAIN MAIN 534
HIGH PRESSURE DRAIN MAIN 258
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
220 ENERGY GENERATING SYSTEM (NON-NUCLEAR)
221 PROPULSION BOILERS



FF-1052 Class
Prepared 7-19-76

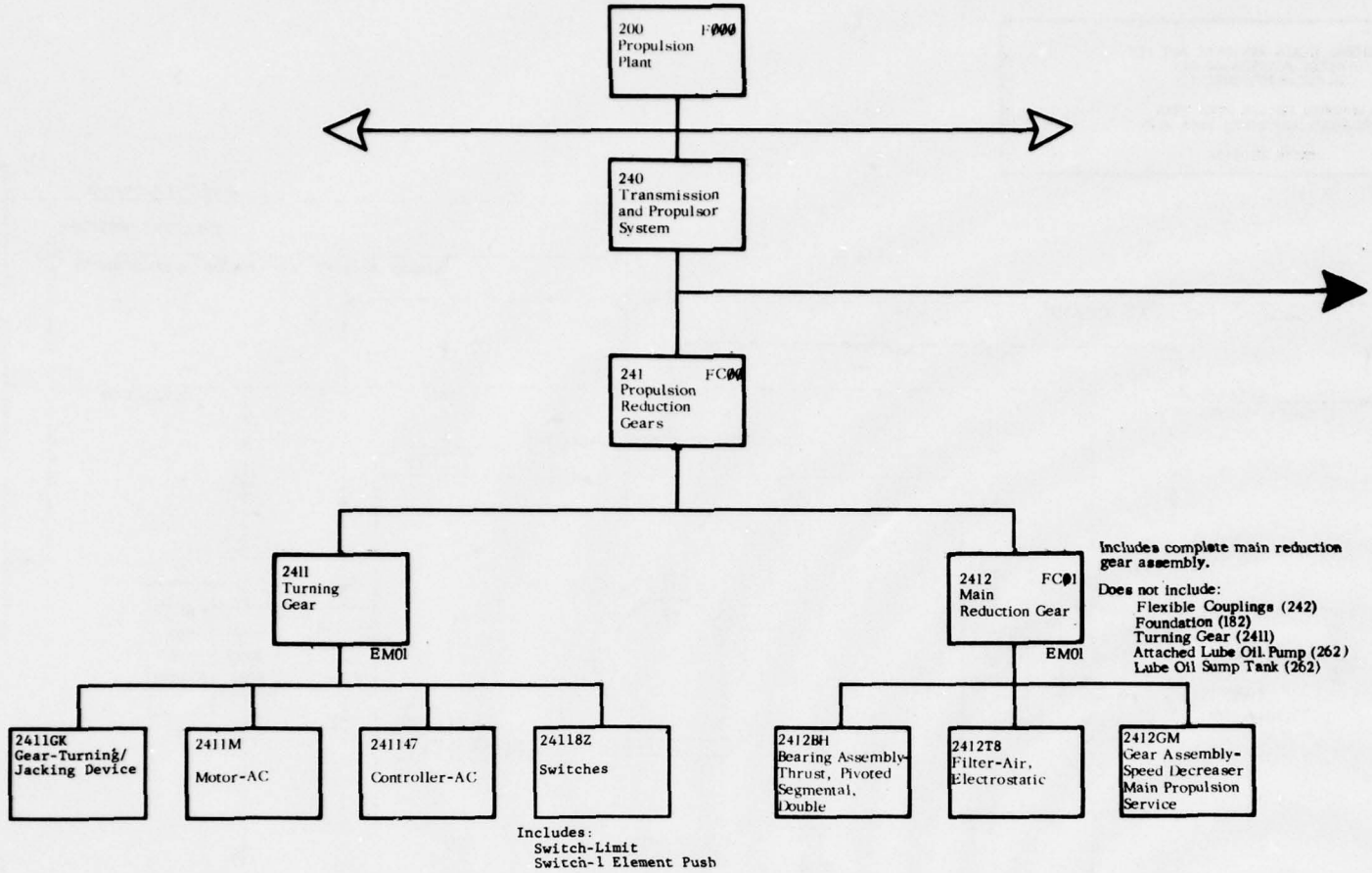

MAIN STEAM SYSTEM 253
SUPERHEATED AHEAD STEAM
L.O. RETURN
LUBE OIL SERVICE SYSTEM 262
MANUALLY OPEN AT SPEEDS OVER 25 KNOTS
LOCALLY OPERATED
H. P. TURBINE EXHAUST PRESSURE
8TH STAGE PRESSURE
GLAND LEAK-OFF VAPORS
GLAND LEAK OFF & EXHAUST SYSTEM 534
MANUAL OPERATION FOR AHEAD SPEED CONTROL
AHEAD THROTTLE HANDWHEEL MAIN GAGE BOARD 252
MECHANICAL OPERATING GEAR
AHEAD THROTTLE VALVE & CHEST
H.P. TURBINES 2311YH
THRUST BEARING 2311BH
FWD BEARING
PACKING BOX GLANDS
VALVE GEAR
VALVE STEM LEAK OFF
PACKING BOX GLANDS
AFT BEARING
POWER
MAIN REDUCTION GEAR 241
COUPLING SPRAY
LUBE OIL SERVICE SYSTEM 262
L.O. SUPPLY
MANUAL INPUTS FOR PRESSURE REGULATION
GLAND SEAL SYSTEM 534
150 PSI AUX. STEAM 534
VP
VP
P
P
STEAM CHEST DRAIN
H.P. TURBINE EXHAUST
LOW PRESSURE TURBINE 231
MANUALLY OPEN DRAIN VALVES DURING TURBINE WARM-UP
FIRST STAGE DRAIN
H.P. EXHAUST DRAIN
TURBINE DRAIN SYSTEM
MAIN CONDENSER HOT WELL 254
REMAINS OPEN DURING TURBINE OPERATION
F.W. DRAIN MAIN 534
H.P. DRAIN MAIN 258
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
230 PROPULSION UNITS
231 HIGH PRESSURE STEAM TURBINES



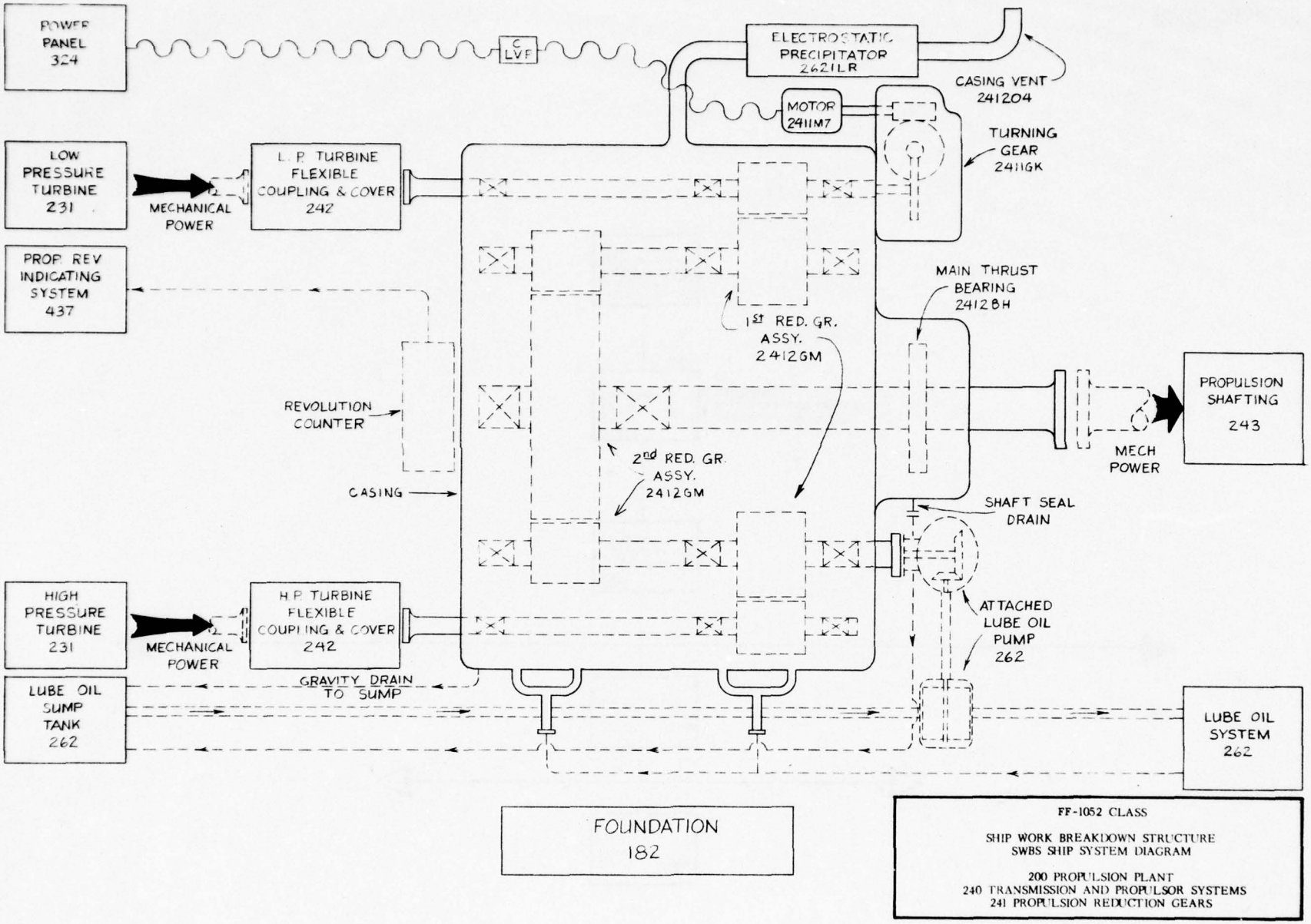
FF-1052 CLASS

SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

200 PROPULSION PLANT
230 PROPULSION UNITS
231 LOW PRESSURE STEAM TURBINES



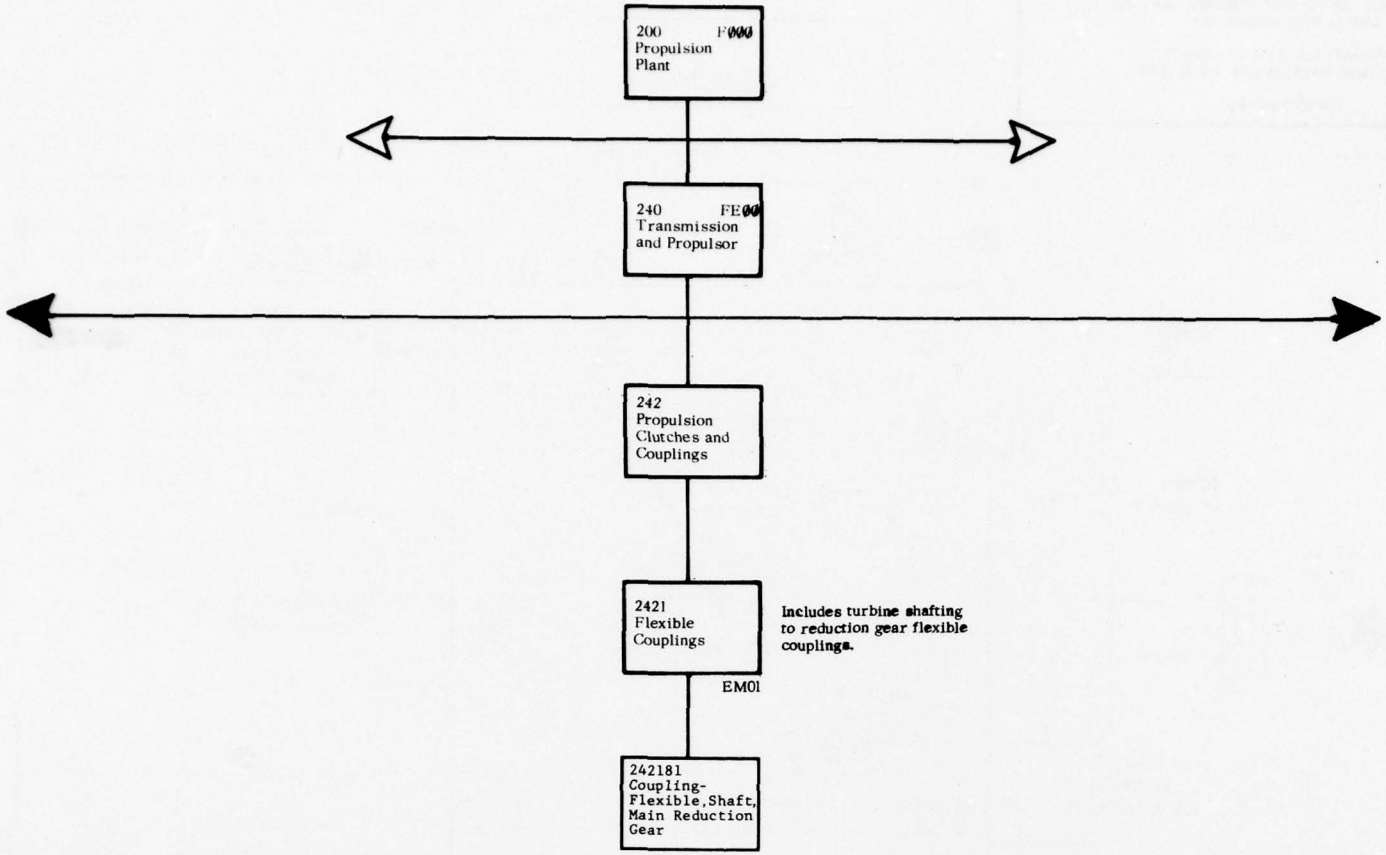
FF-1052 Class
Prepared 7-19-76



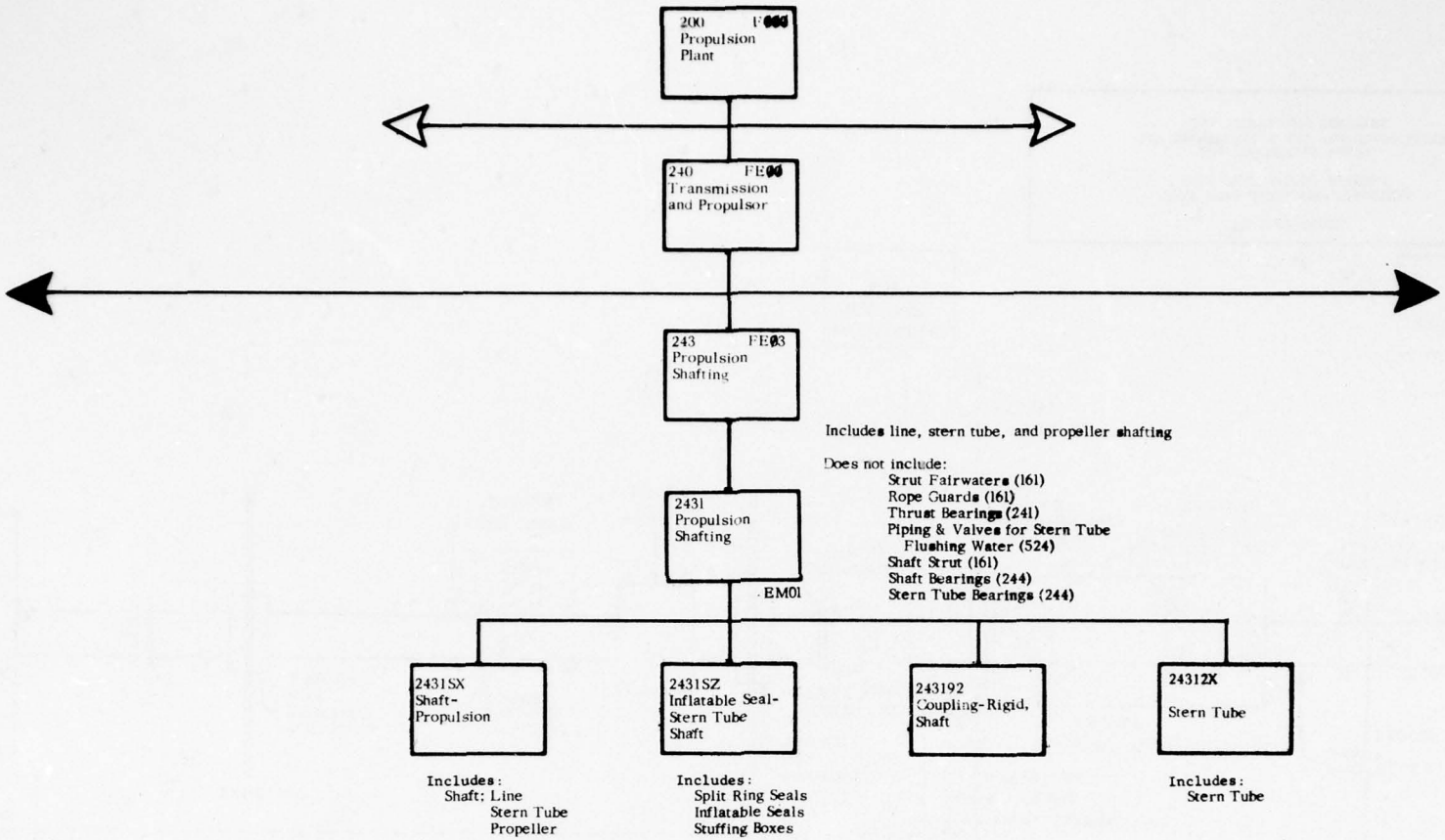
FF-1052 CLASS

SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

200 PROPULSION PLANT
240 TRANSMISSION AND PROPULSOR SYSTEMS
241 PROPULSION REDUCTION GEARS

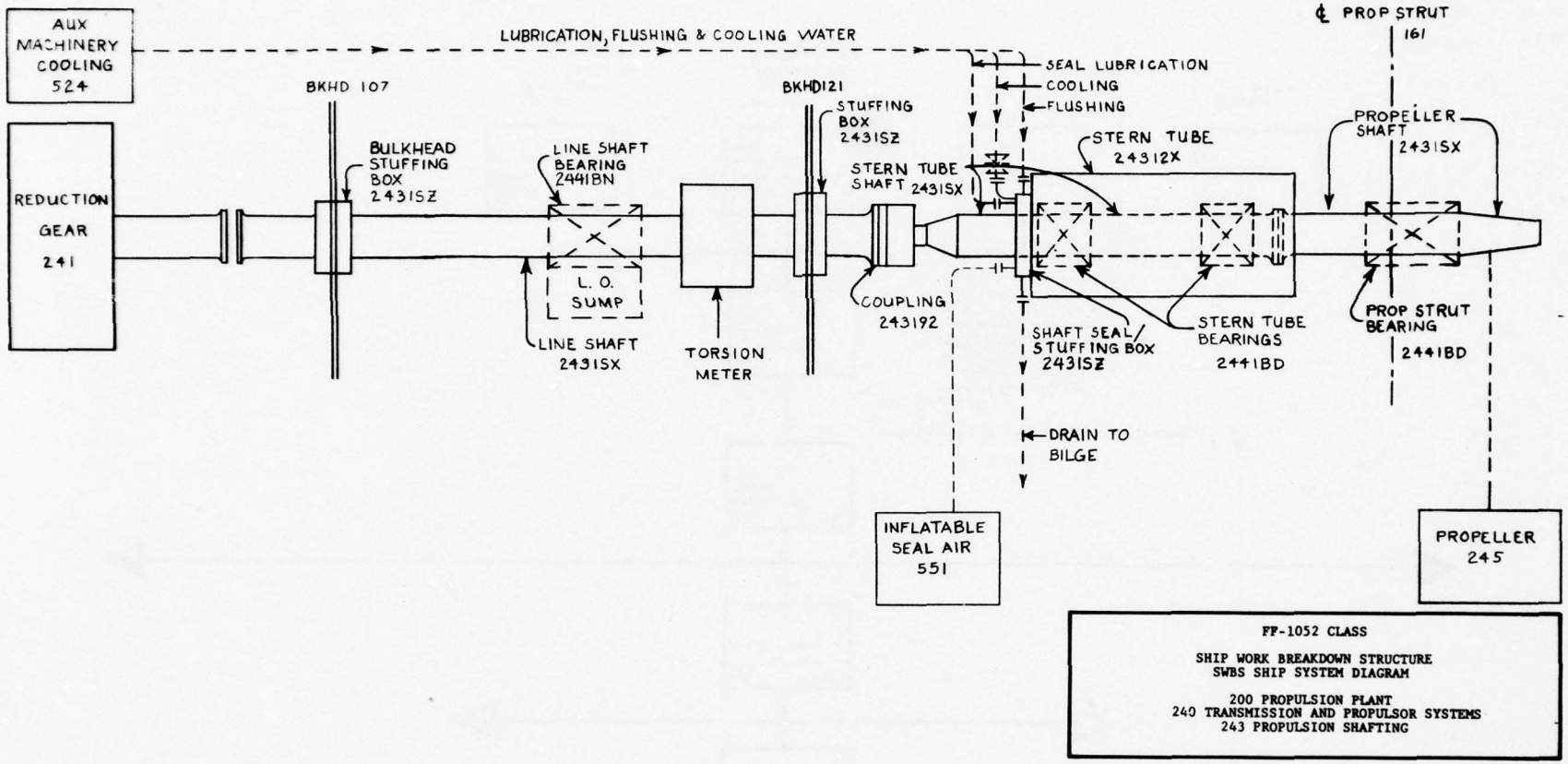


FF-1052 Class
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FF-1052 Class
Prepared 7-19-76

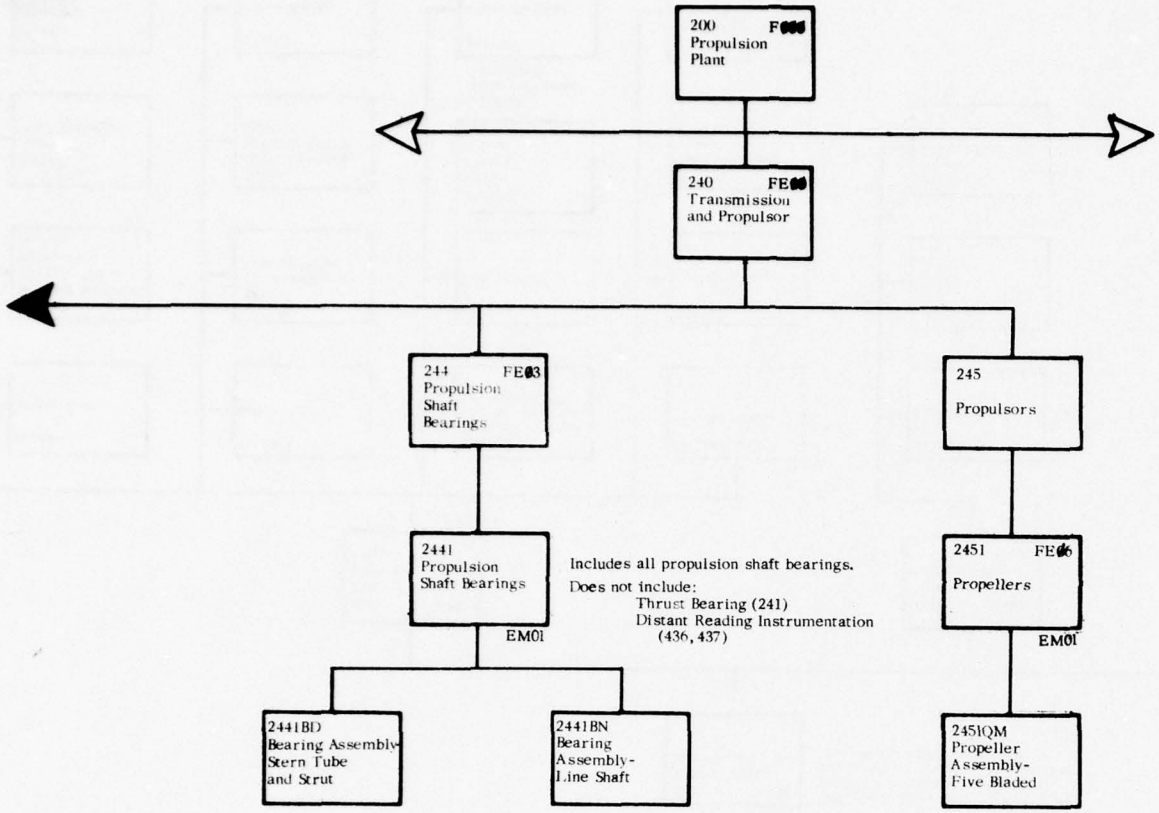
SHAFTING
MAIN PROPULSION
243



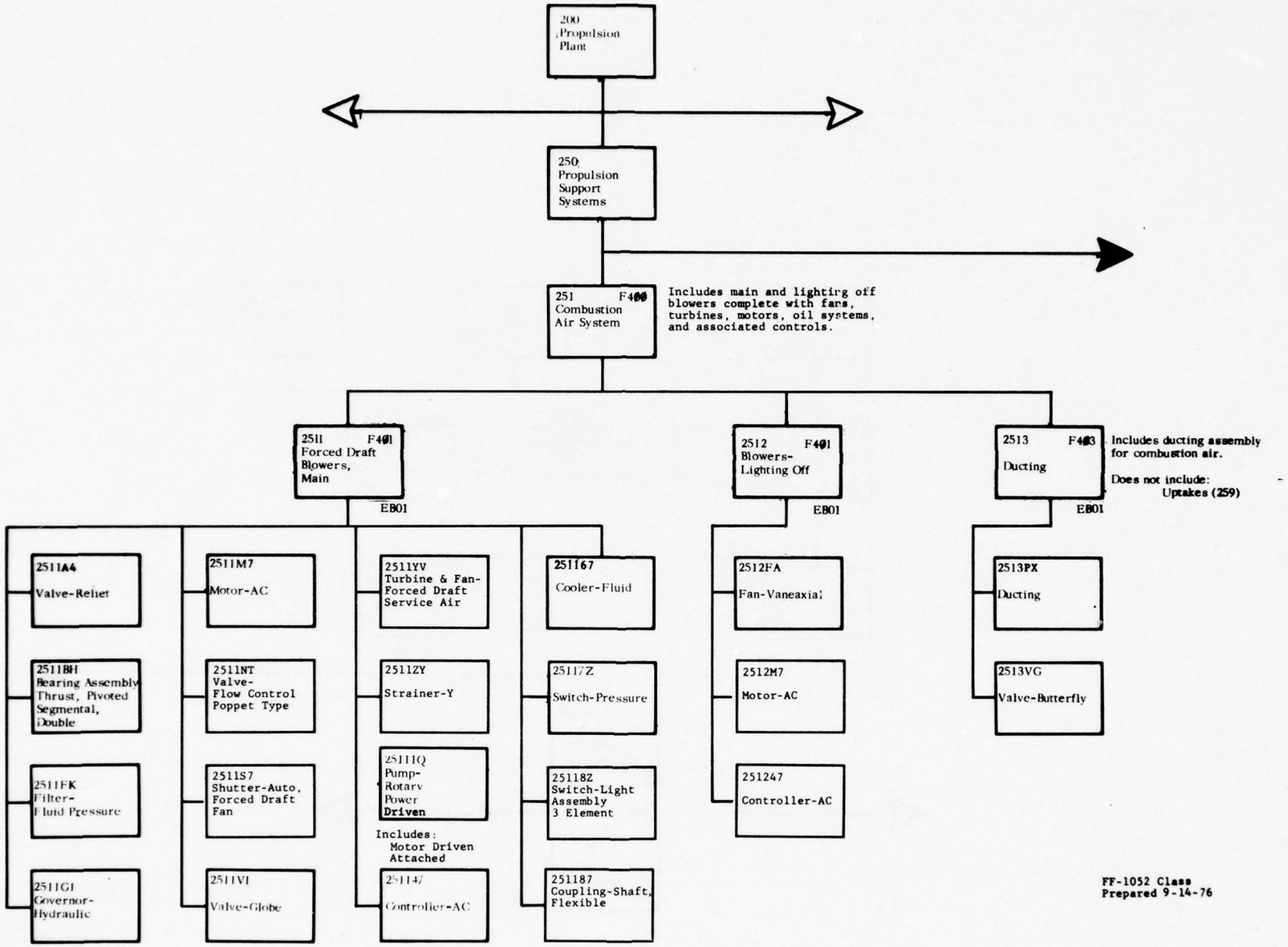
FF-1052 CLASS

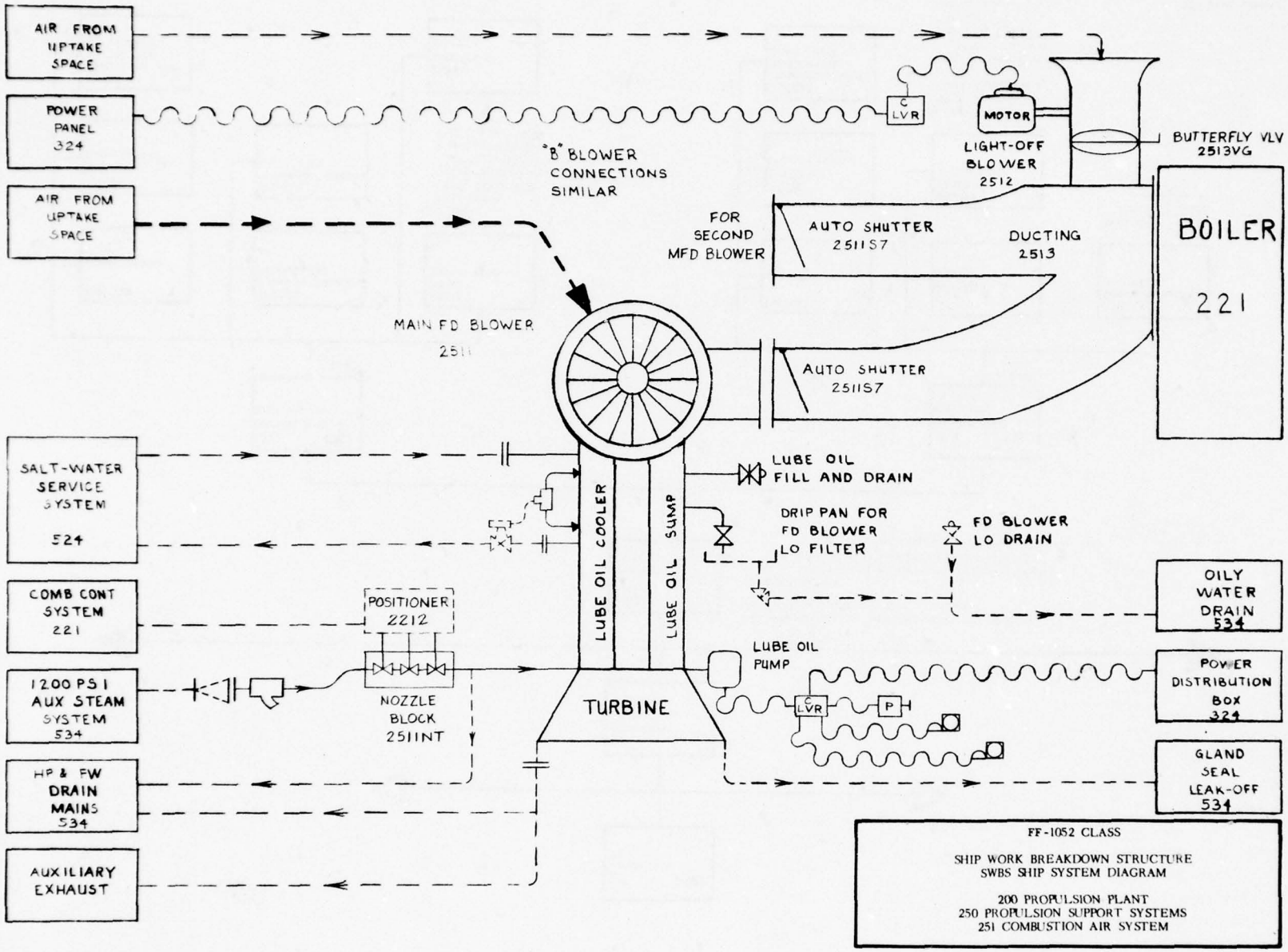
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

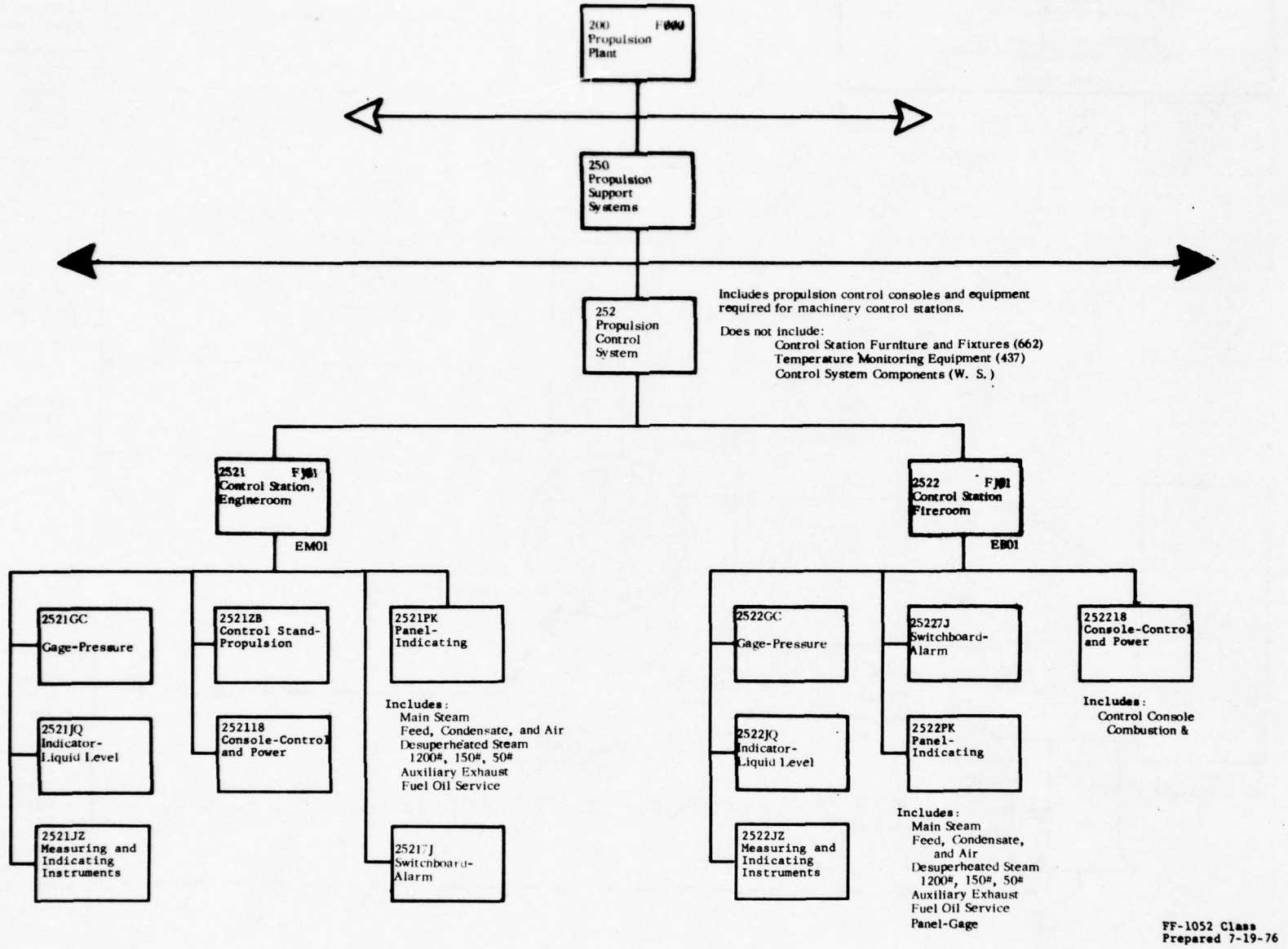
200 PROPULSION PLANT
240 TRANSMISSION AND PROPULSOR SYSTEMS
243 PROPULSION SHAFTING

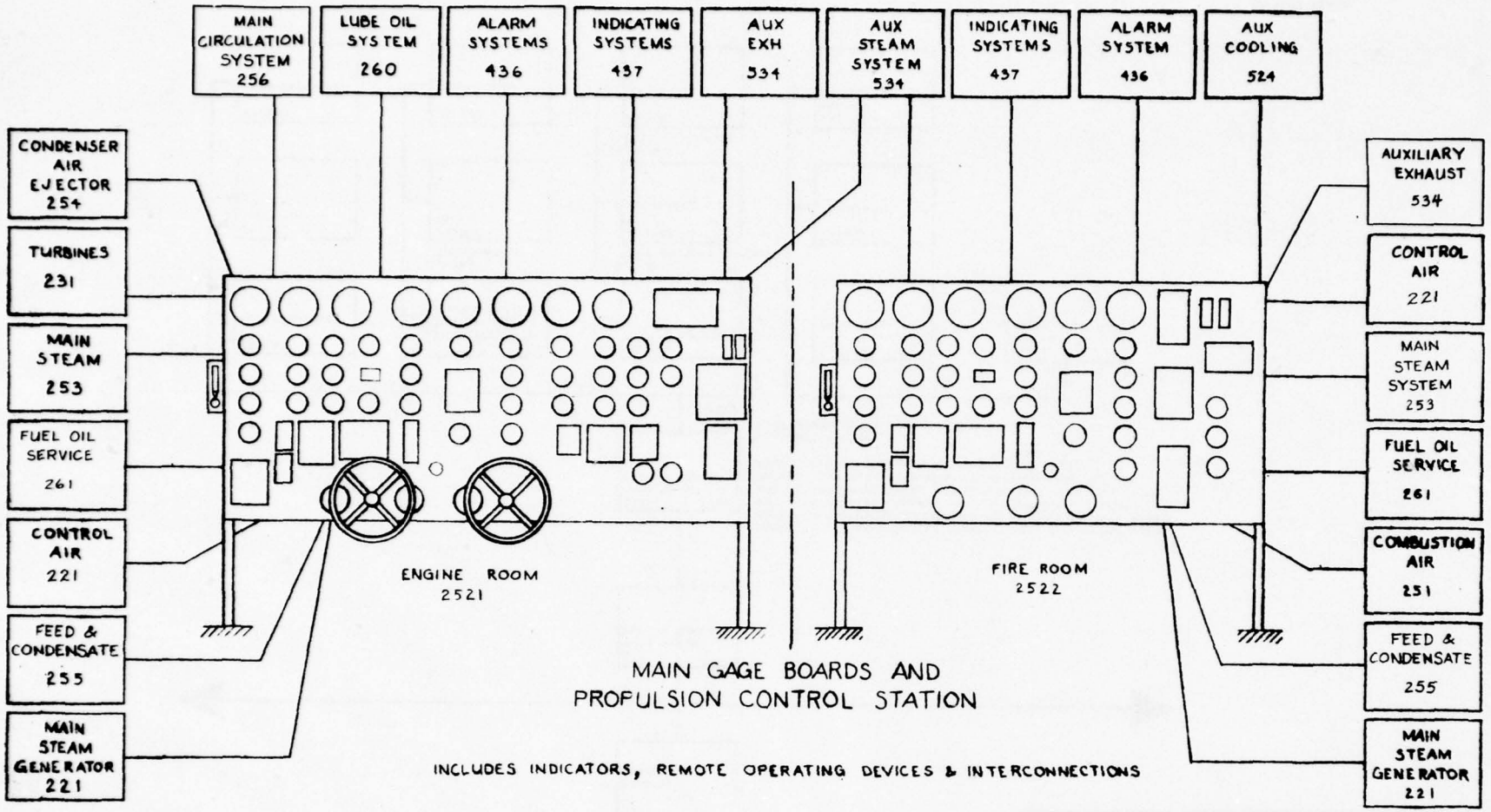


FF-1052 Class
Prepared 7-19-76


200
Propulsion Plant
250
Propulsion Support Systems
251 F400
Combustion Air System
Includes main and lighting off blowers complete with fans, turbines, motors, oil systems, and associated controls.
2511 F401
Forced Draft Blowers, Main
EB01
2512 F401
Blowers-Lighting Off
EB01
2513 F403
Ducting
EB01
Includes ducting assembly for combustion air.
Does not include:
Uptakes (259)
2511A4
Valve-Relief
2511BH
Bearing Assembly Thrust, Pivoted Segmental, Double
2511FK
Filter-Fluid Pressure
2511GI
Governor-Hydraulic
2511M7
Motor-AC
2511NT
Valve-Flow Control Poppet Type
2511S7
Shutter-Auto, Forced Draft Fan
2511VI
Valve-Globe
2511YV
Turbine & Fan-Forced Draft Service Air
2511ZY
Strainer-Y
2511IQ
Pump-Rotary Power Driven
Includes:
Motor Driven
Attached
251147
Controller-AC
251167
Cooler-Fluid
25117Z
Switch-Pressure
25118Z
Switch-Light Assembly 3 Element
251187
Coupling-Shaft, Flexible
2512FA
Fan-Vaneaxial
2512M7
Motor-AC
251247
Controller-AC
2513PX
Ducting
2513VG
Valve-Butterfly
FF-1052 Class
Prepared 9-14-76


AIR FROM UPTAKE SPACE
POWER PANEL 324
AIR FROM UPTAKE SPACE
"B" BLOWER CONNECTIONS SIMILAR
C LVR
MOTOR
LIGHT-OFF BLOWER 2512
BUTTERFLY VLV 2513VG
FOR SECOND MFD BLOWER
AUTO SHUTTER 2511S7
DUCTING 2513
BOILER 221
MAIN FD BLOWER 2511
AUTO SHUTTER 2511S7
SALT-WATER SERVICE SYSTEM 524
LUBE OIL COOLER
LUBE OIL SUMP
LUBE OIL FILL AND DRAIN
DRIP PAN FOR FD BLOWER LO FILTER
FD BLOWER LO DRAIN
OILY WATER DRAIN 534
COMB CONT SYSTEM 221
POSITIONER 2212
1200 PSI AUX STEAM SYSTEM 534
NOZZLE BLOCK 2511NT
LUBE OIL PUMP
TURBINE
C LVR
P
POWER DISTRIBUTION BOX 324
GLAND SEAL LEAK-OFF 534
HP & FW DRAIN MAINS 534
AUXILIARY EXHAUST
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
251 COMBUSTION AIR SYSTEM


200 F000
Propulsion Plant
250
Propulsion Support Systems
252
Propulsion Control System
Includes propulsion control consoles and equipment required for machinery control stations.
Does not include:
Control Station Furniture and Fixtures (662)
Temperature Monitoring Equipment (437)
Control System Components (W. S.)
2521 F003
Control Station, Engineroom
EM01
2521GC
Gage-Pressure
2521JQ
Indicator-Liquid Level
2521JZ
Measuring and Indicating Instruments
2521ZB
Control Stand-Propulsion
252118
Console-Control and Power
2521PK
Panel-Indicating
Includes:
Main Steam
Feed, Condensate, and Air
Desuperheated Steam 1200#, 150#, 50#
Auxiliary Exhaust
Fuel Oil Service
2521TJ
Switchboard-Alarm
2522 F001
Control Station Fireroom
EB01
2522GC
Gage-Pressure
2522JQ
Indicator-Liquid Level
2522JZ
Measuring and Indicating Instruments
25227J
Switchboard-Alarm
2522PK
Panel-Indicating
Includes:
Main Steam
Feed, Condensate, and Air
Desuperheated Steam 1200#, 150#, 50#
Auxiliary Exhaust
Fuel Oil Service
Panel-Gage
252218
Console-Control and Power
Includes:
Control Console
Combustion &
FF-1052 Class
Prepared 7-19-76



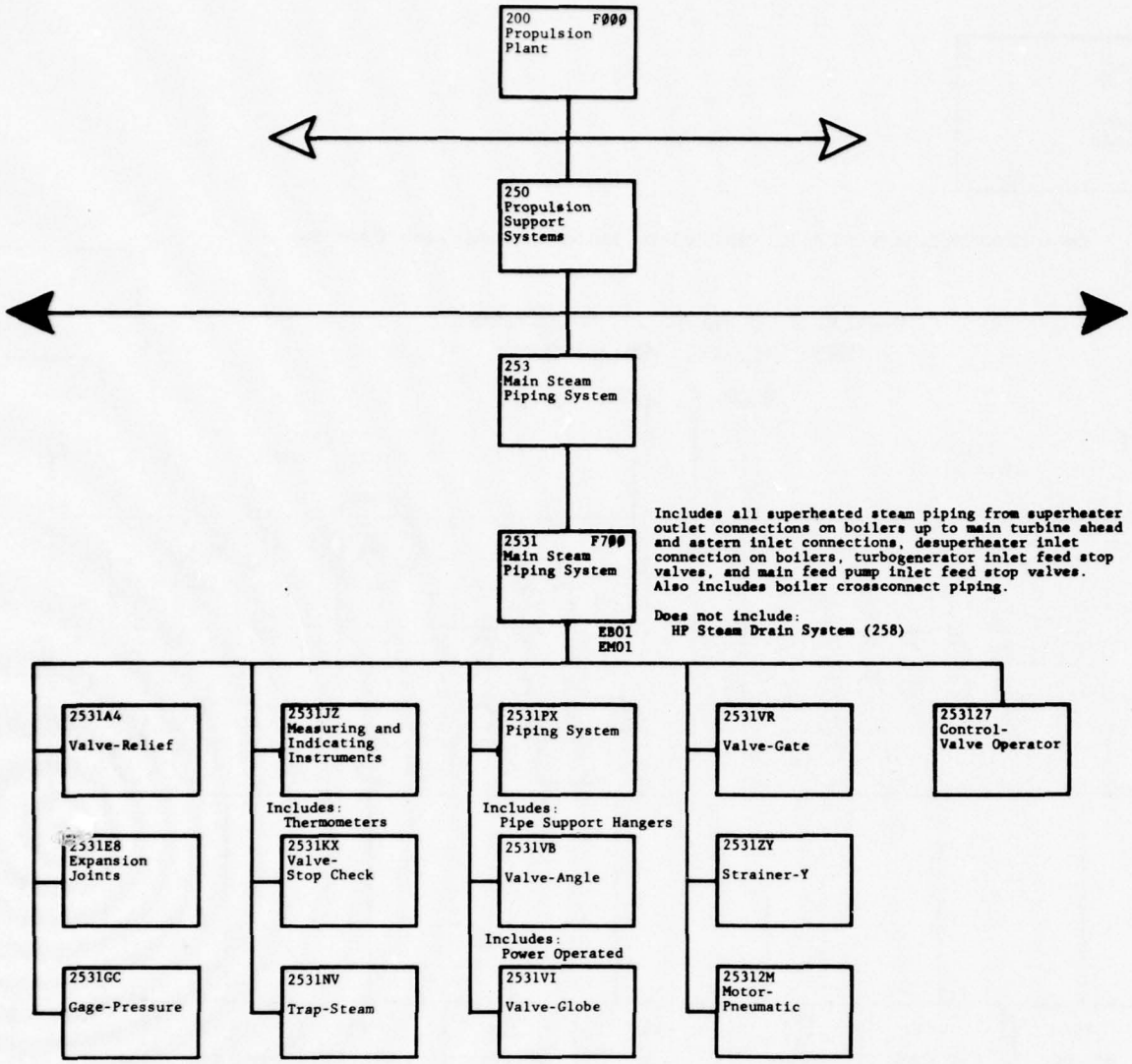
MAIN GAGE BOARDS AND
PROFULSION CONTROL STATION

INCLUDES INDICATORS, REMOTE OPERATING DEVICES & INTERCONNECTIONS

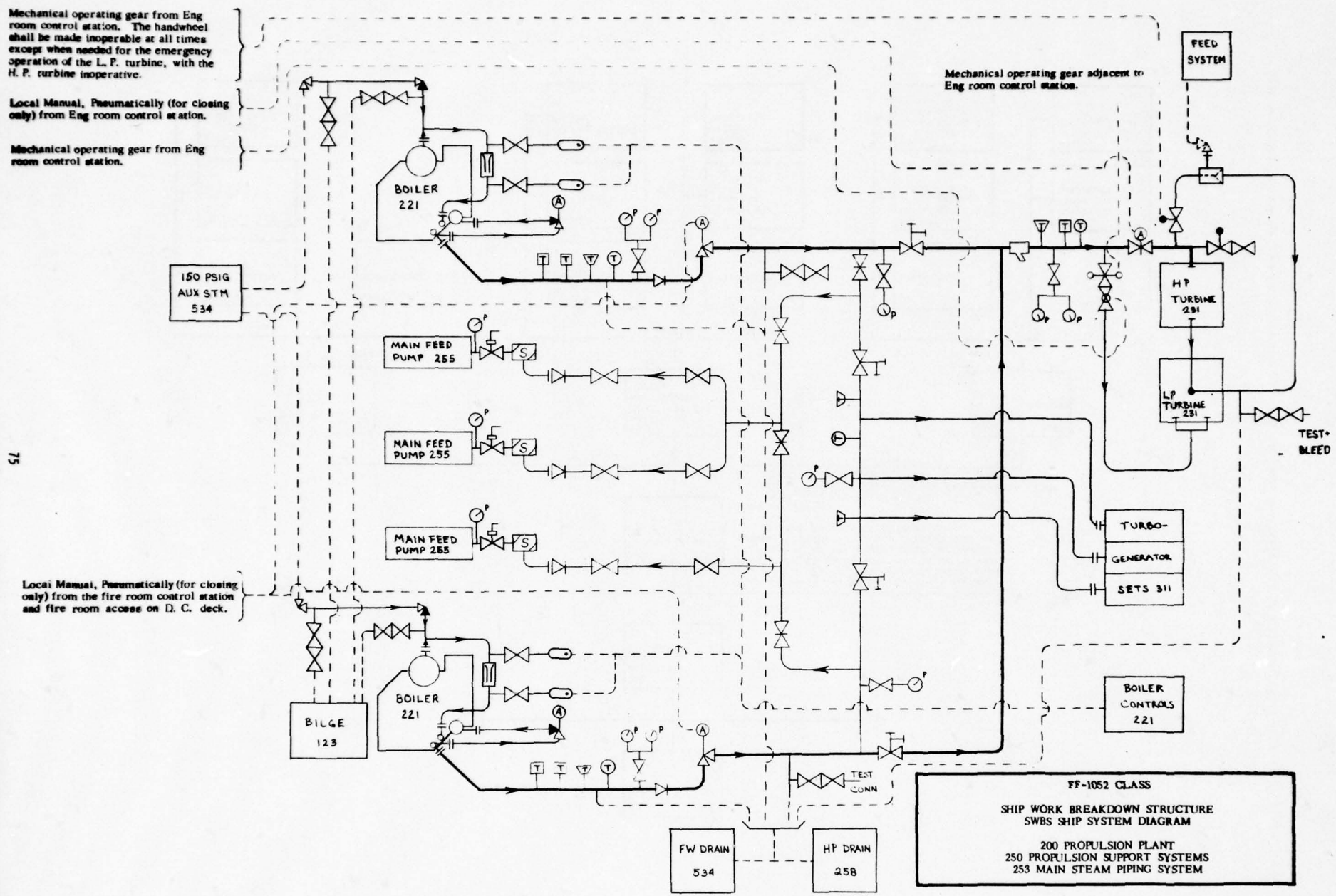
FF-1052 CLASS

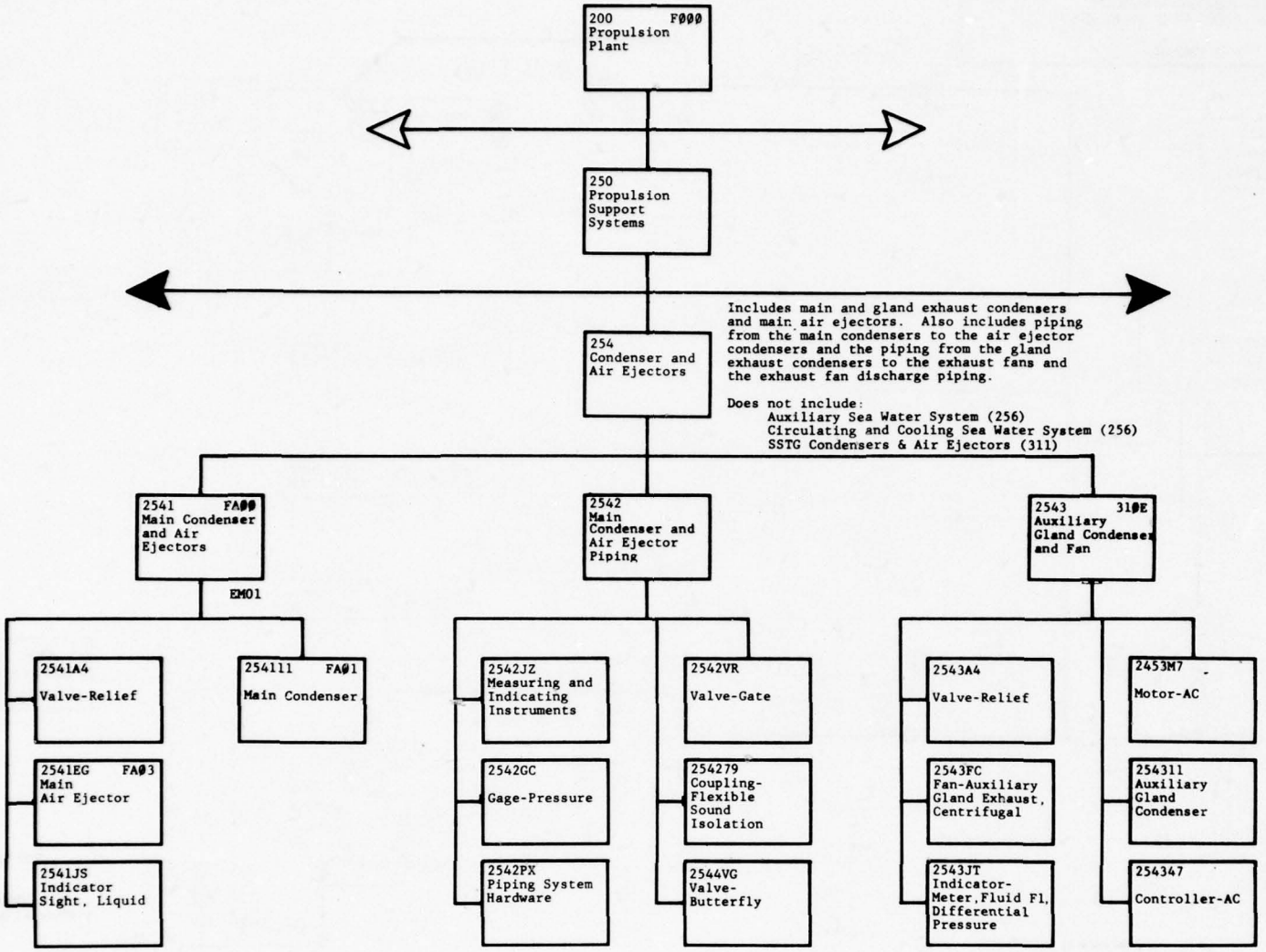
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

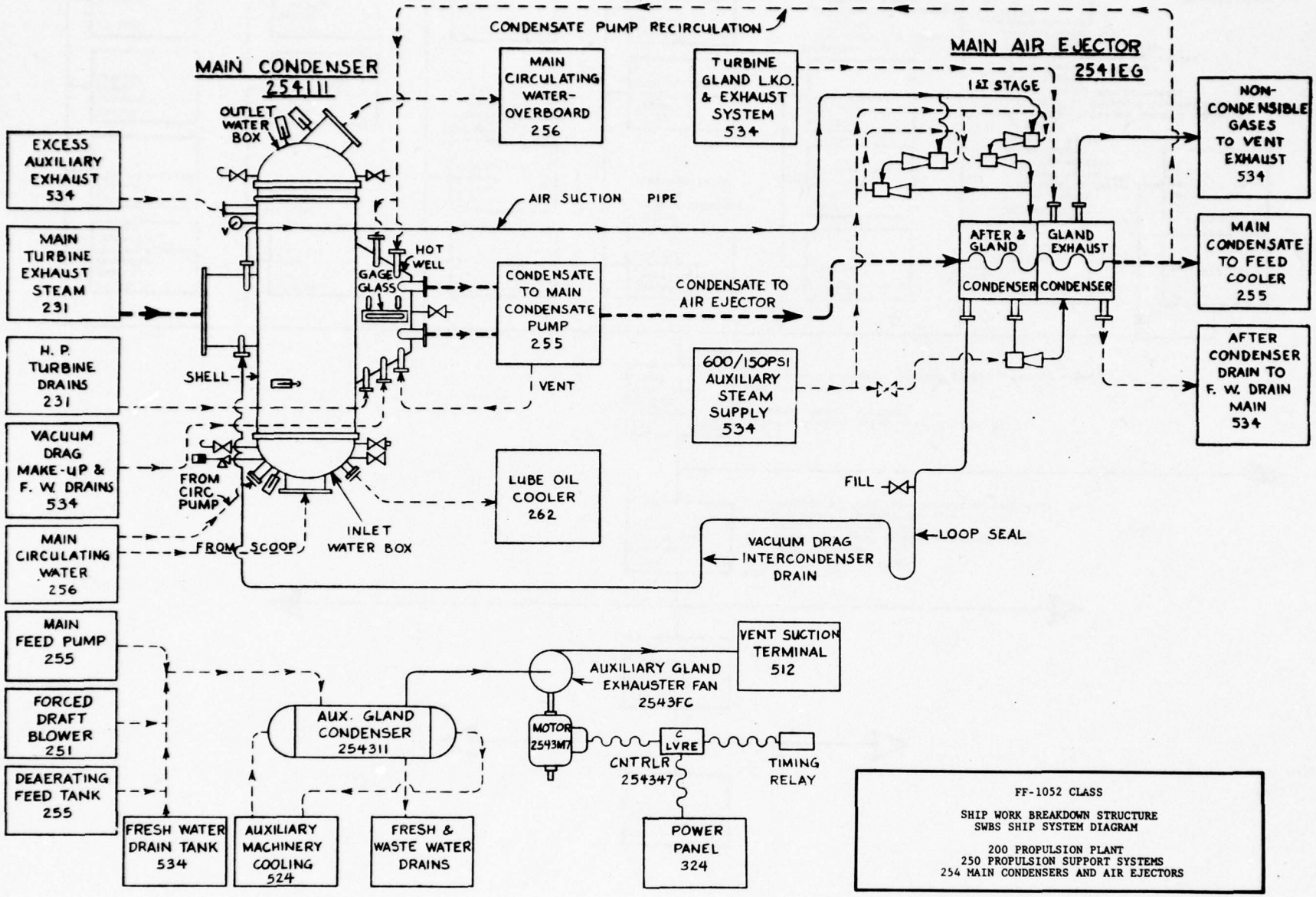
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
252 PROPULSION CONTROL SYSTEM

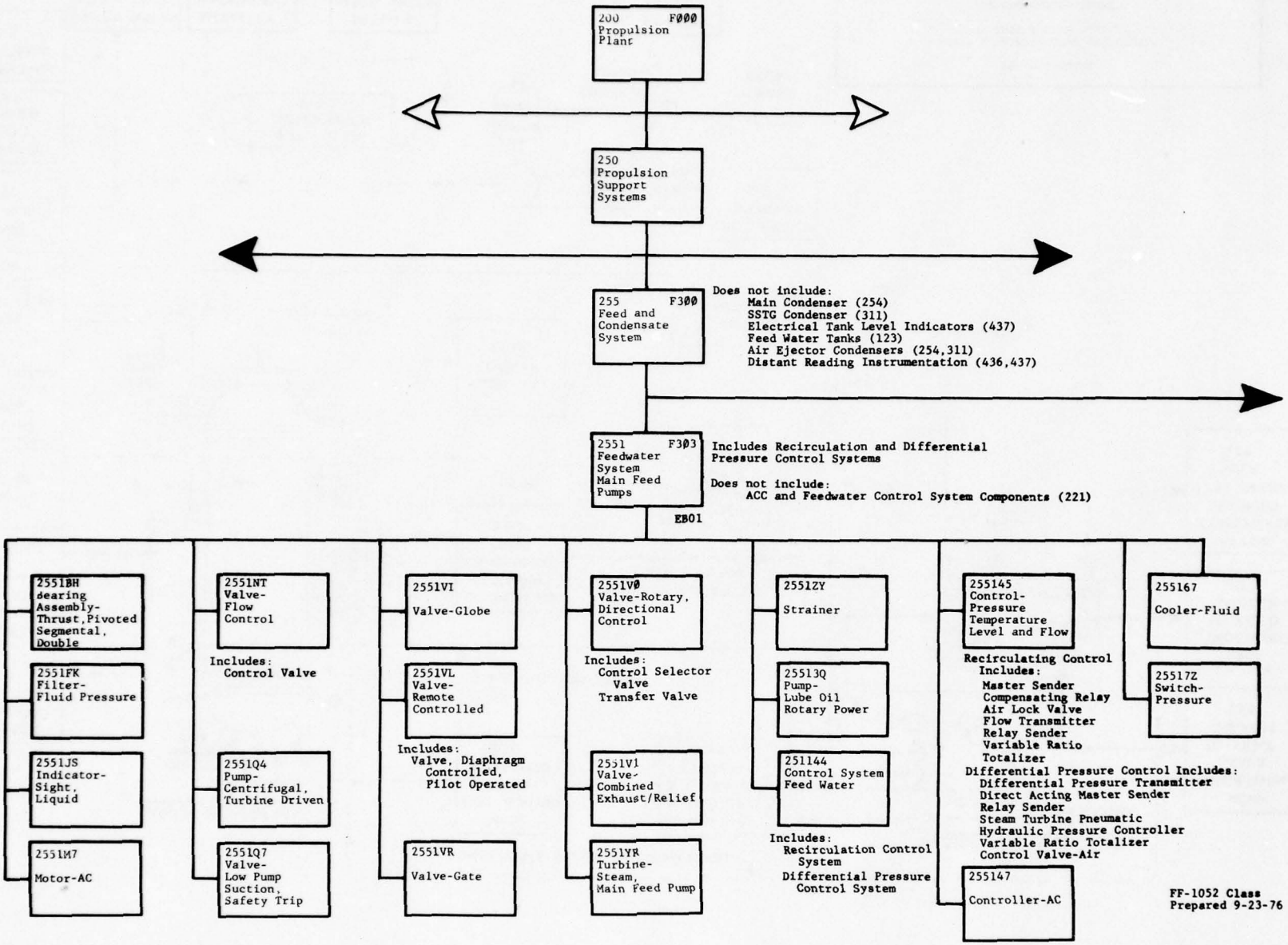


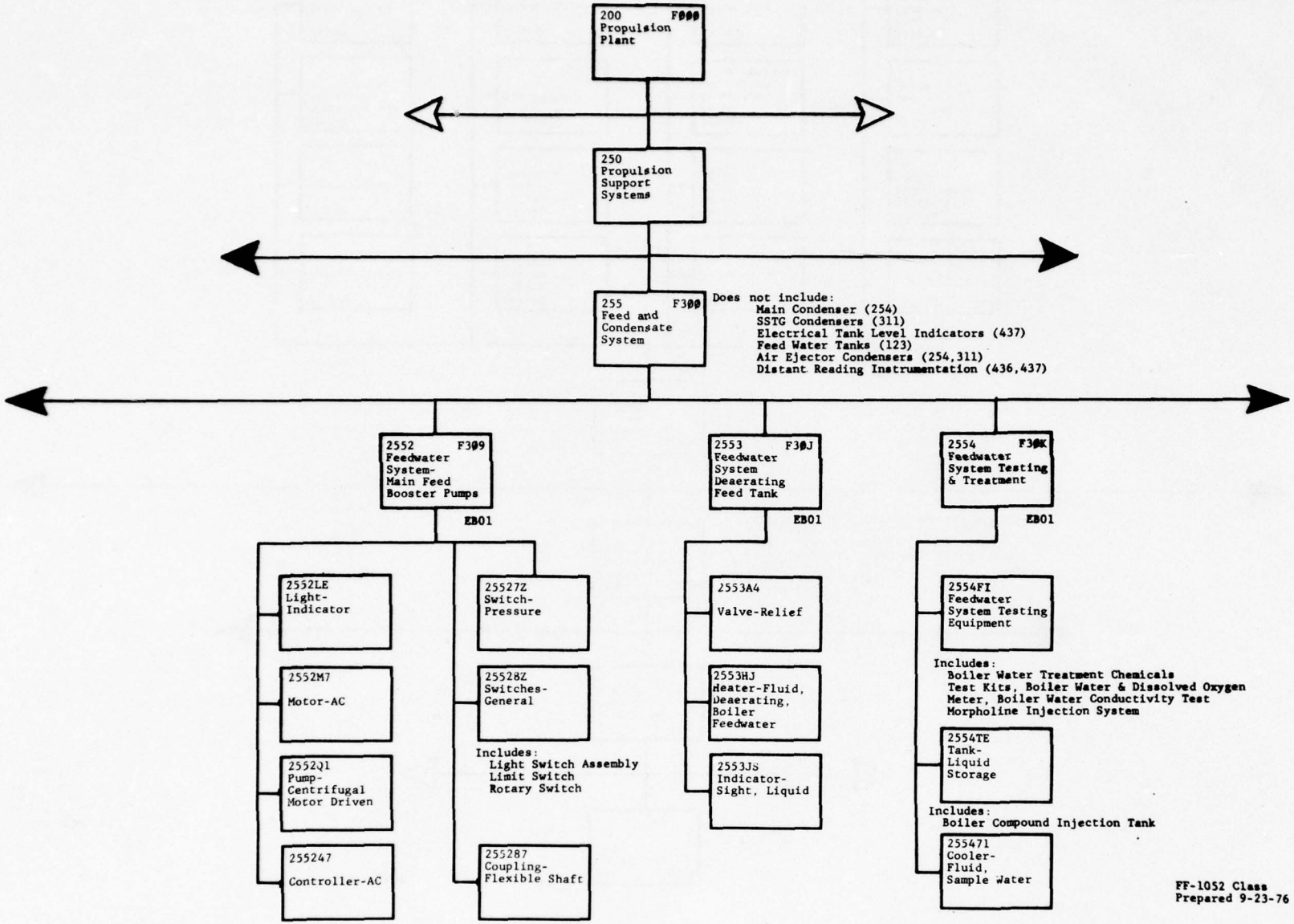
FF-1052 Class
Prepared 9-14-76

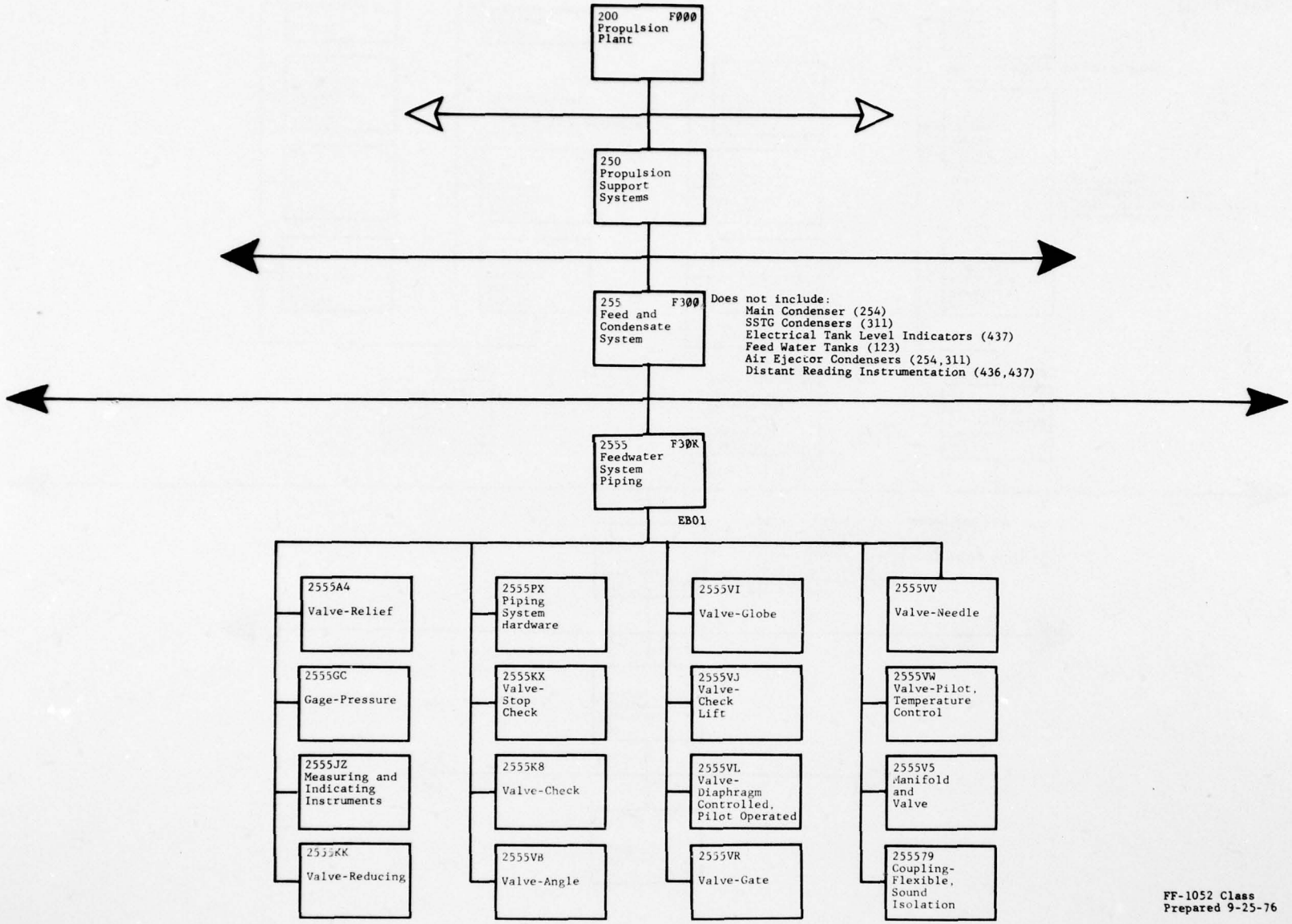

Mechanical operating gear from Eng room control station. The handwheel shall be made inoperable at all times except when needed for the emergency operation of the L. P. turbine, with the H. P. turbine inoperative.
Local Manual, Pneumatically (for closing only) from Eng room control station.
Mechanical operating gear from Eng room control station.
Mechanical operating gear adjacent to Eng room control station.
FEED SYSTEM
BOILER 221
150 PSIG AUX STM 534
MAIN FEED PUMP 255
MAIN FEED PUMP 255
MAIN FEED PUMP 255
HP TURBINE 231
LP TURBINE 231
TEST+ BLEED
TURBO-GENERATOR SETS 311
Local Manual, Pneumatically (for closing only) from the fire room control station and fire room access on D. C. deck.
BILGE 123
BOILER 221
BOILER CONTROLS 221
TEST CONN
FW DRAIN 534
HP DRAIN 258
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
253 MAIN STEAM PIPING SYSTEM


200 F000
Propulsion Plant
250
Propulsion Support Systems
254
Condenser and Air Ejectors
Includes main and gland exhaust condensers and main air ejectors. Also includes piping from the main condensers to the air ejector condensers and the piping from the gland exhaust condensers to the exhaust fans and the exhaust fan discharge piping.
Does not include:
Auxiliary Sea Water System (256)
Circulating and Cooling Sea Water System (256)
SSTG Condensers & Air Ejectors (311)
2541 FA00
Main Condenser and Air Ejectors
EM01
2542
Main Condenser and Air Ejector Piping
2543 310E
Auxiliary Gland Condenser and Fan
2541A4
Valve-Relief
254111 FA01
Main Condenser
2541EG FA03
Main Air Ejector
2541JS
Indicator Sight, Liquid
2542JZ
Measuring and Indicating Instruments
2542VR
Valve-Gate
2542GC
Gage-Pressure
254279
Coupling-Flexible Sound Isolation
2542PX
Piping System Hardware
2544VG
Valve-Butterfly
2543A4
Valve-Relief
2453M7
Motor-AC
2543FC
Fan-Auxiliary Gland Exhaust, Centrifugal
254311
Auxiliary Gland Condenser
2543JT
Indicator-Meter, Fluid Fl, Differential Pressure
254347
Controller-AC

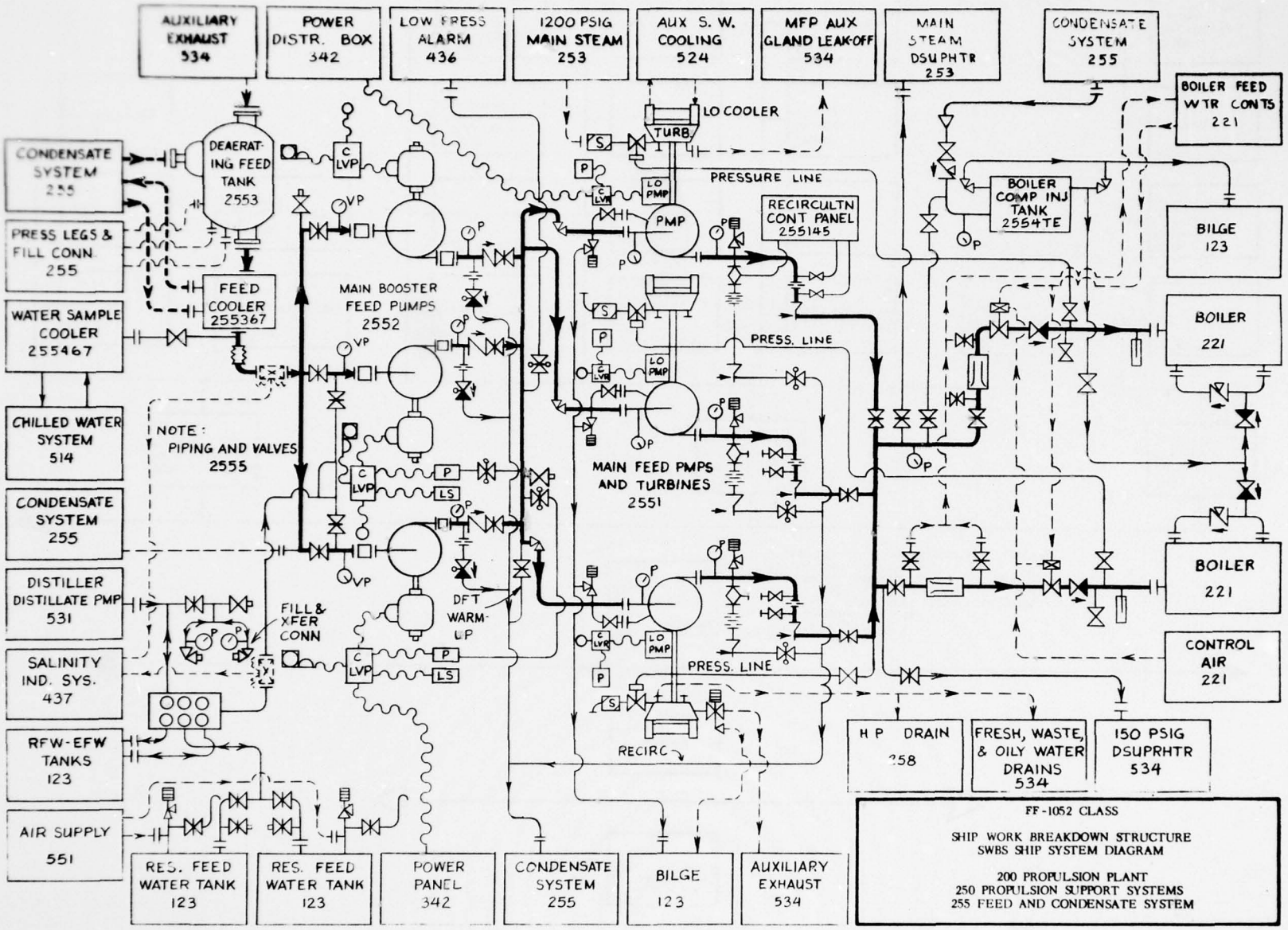

CONDENSATE PUMP RECIRCULATION
MAIN CONDENSER
254111
MAIN CIRCULATING WATER-OVERBOARD 256
TURBINE GLAND L.K.O. & EXHAUST SYSTEM 534
MAIN AIR EJECTOR
2541EG
1&I STAGE
NON-CONDENSIBLE GASES TO VENT EXHAUST 534
OUTLET WATER BOX
EXCESS AUXILIARY EXHAUST 534
AIR SUCTION PIPE
MAIN TURBINE EXHAUST STEAM 231
HOT WELL
GAGE GLASS
CONDENSATE TO MAIN CONDENSATE PUMP 255
CONDENSATE TO AIR EJECTOR
AFTER & GLAND CONDENSER
GLAND EXHAUST CONDENSER
MAIN CONDENSATE TO FEED COOLER 255
H. P. TURBINE DRAINS 231
SHELL
VENT
600/150PSI AUXILIARY STEAM SUPPLY 534
AFTER CONDENSER DRAIN TO F. W. DRAIN MAIN 534
VACUUM DRAG MAKE-UP & F. W. DRAINS 534
FROM CIRC. PUMP
LUBE OIL COOLER 262
FILL
MAIN CIRCULATING WATER 256
FROM SCOOP
INLET WATER BOX
VACUUM DRAG INTERCONDENSER DRAIN
LOOP SEAL
MAIN FEED PUMP 255
VENT SUCTION TERMINAL 512
AUXILIARY GLAND EXHAUSTER FAN 2543FC
FORCED DRAFT BLOWER 251
AUX. GLAND CONDENSER 254311
MOTOR 2543M7
C LVRE
CNTRLR 254347
TIMING RELAY
DEAERATING FEED TANK 255
FRESH WATER DRAIN TANK 534
AUXILIARY MACHINERY COOLING 524
FRESH & WASTE WATER DRAINS
POWER PANEL 324
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
254 MAIN CONDENSERS AND AIR EJECTORS

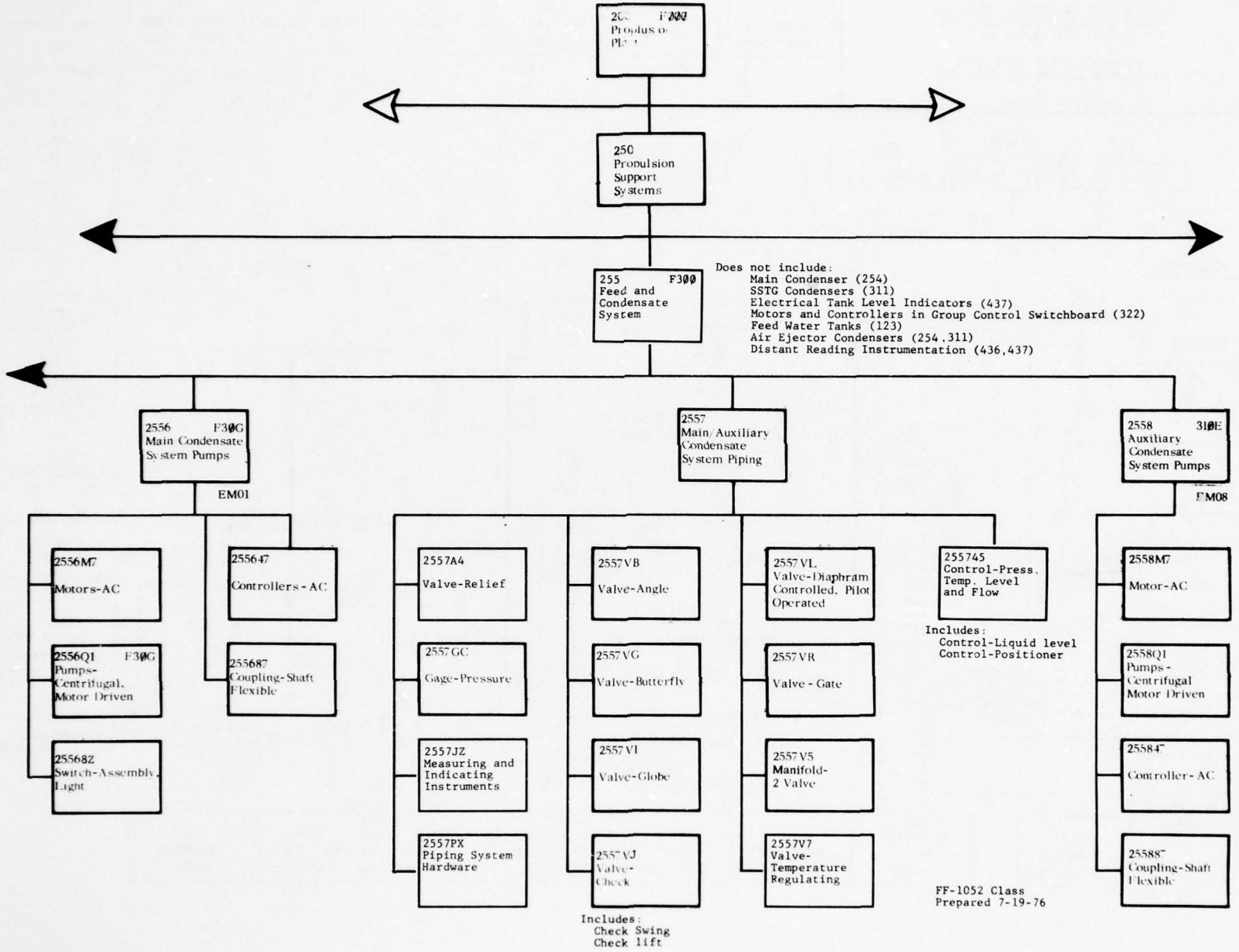

200 F000
Propulsion Plant
250
Propulsion Support Systems
255 F300
Feed and Condensate System
Does not include:
Main Condenser (254)
SSTG Condenser (311)
Electrical Tank Level Indicators (437)
Feed Water Tanks (123)
Air Ejector Condensers (254,311)
Distant Reading Instrumentation (436,437)
2551 F303
Feedwater System Main Feed Pumps
Includes Recirculation and Differential Pressure Control Systems
Does not include:
ACC and Feedwater Control System Components (221)
EB01
2551BH
dearing Assembly-Thrust,Pivoted Segmental, Double
2551FK
Filter-Fluid Pressure
2551JS
Indicator-Sight, Liquid
2551M7
Motor-AC
2551NT
Valve-Flow Control
Includes:
Control Valve
2551Q4
Pump-Centrifugal, Turbine Driven
2551Q7
Valve-Low Pump Suction, Safety Trip
2551VI
Valve-Globe
2551VL
Valve-Remote Controlled
Includes:
Valve, Diaphragm Controlled, Pilot Operated
2551VR
Valve-Gate
2551V0
Valve-Rotary, Directional Control
Includes:
Control Selector Valve
Transfer Valve
2551V1
Valve-Combined Exhaust/Relief
2551YR
Turbine-Steam, Main Feed Pump
2551ZY
Strainer
25513Q
Pump-Lube Oil Rotary Power
251144
Control System Feed Water
Includes:
Recirculation Control System
Differential Pressure Control System
255145
Control-Pressure Temperature Level and Flow
Recirculating Control Includes:
Master Sender
Compensating Relay
Air Lock Valve
Flow Transmitter
Relay Sender
Variable Ratio Totalizer
Differential Pressure Control Includes:
Differential Pressure Transmitter
Direct Acting Master Sender
Relay Sender
Steam Turbine Pneumatic
Hydraulic Pressure Controller
Variable Ratio Totalizer
Control Valve-Air
255147
Controller-AC
255167
Cooler-Fluid
25517Z
Switch-Pressure
FF-1052 Class
Prepared 9-23-76

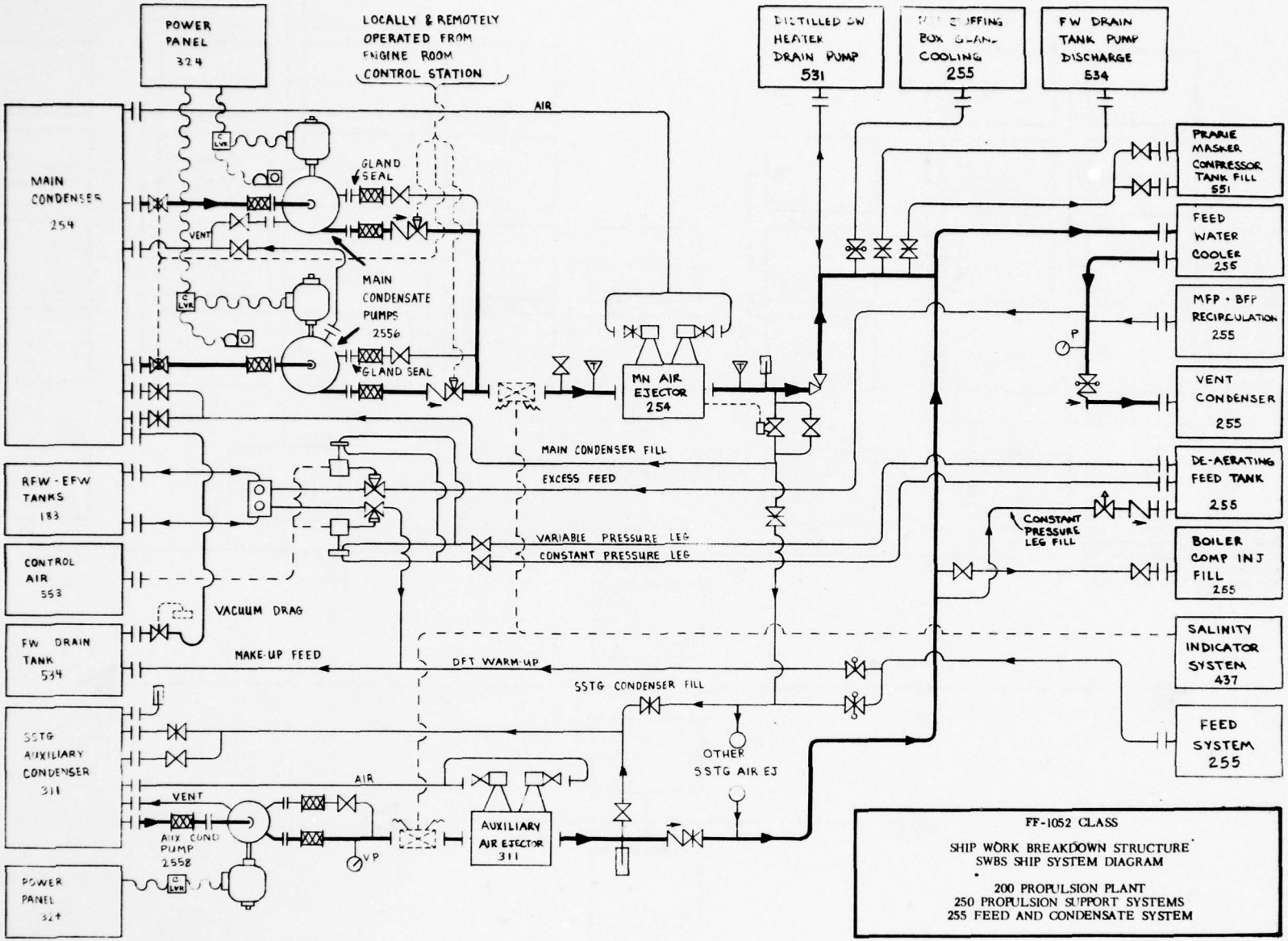

200 F000
Propulsion Plant
250
Propulsion Support Systems
255 F300
Feed and Condensate System
Does not include:
Main Condenser (254)
SSTG Condensers (311)
Electrical Tank Level Indicators (437)
Feed Water Tanks (123)
Air Ejector Condensers (254,311)
Distant Reading Instrumentation (436,437)
2552 F309
Feedwater System-Main Feed Booster Pumps
EB01
2552LE
Light-Indicator
2552M7
Motor-AC
2552Q1
Pump-Centrifugal Motor Driven
255247
Controller-AC
25527Z
Switch-Pressure
25528Z
Switches-General
Includes:
Light Switch Assembly
Limit Switch
Rotary Switch
255287
Coupling-Flexible Shaft
2553 F30J
Feedwater System Deaerating Feed Tank
EB01
2553A4
Valve-Relief
2553HJ
Heater-Fluid, Deaerating, Boiler Feedwater
2553JS
Indicator-Sight, Liquid
2554 F30K
Feedwater System Testing & Treatment
EB01
2554FI
Feedwater System Testing Equipment
Includes:
Boiler Water Treatment Chemicals
Test Kits, Boiler Water & Dissolved Oxygen
Meter, Boiler Water Conductivity Test
Morpholine Injection System
2554TE
Tank-Liquid Storage
Includes:
Boiler Compound Injection Tank
255471
Cooler-Fluid, Sample Water
FF-1052 Class
Prepared 9-23-76

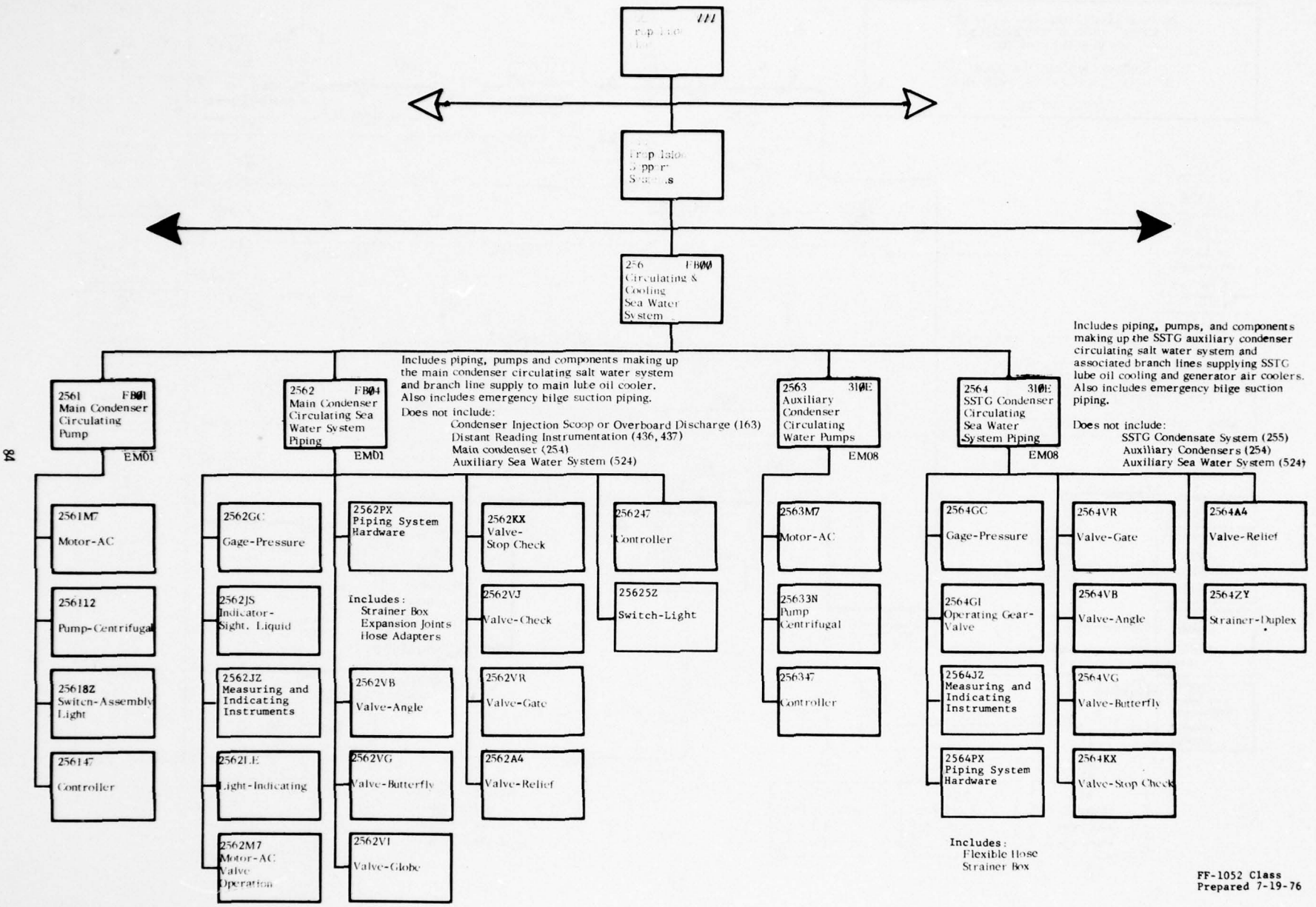


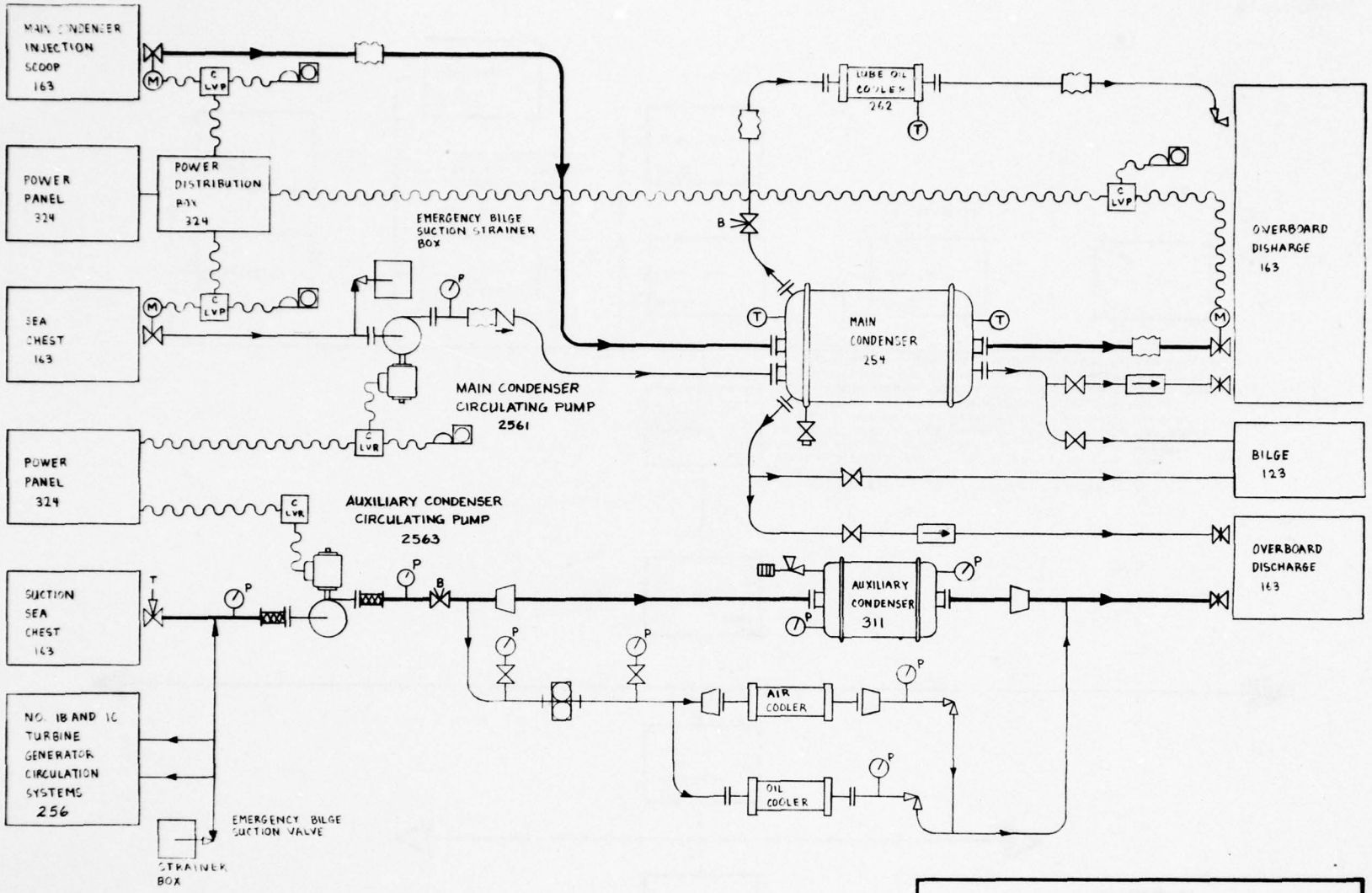
FF-1052 Class
Prepared 9-25-76


AUXILIARY EXHAUST 534
POWER DISTR. BOX 342
LOW PRESS ALARM 436
1200 PSIG MAIN STEAM 253
AUX S. W. COOLING 524
MFP AUX GLAND LEAK-OFF 534
MAIN STEAM DSUPHTR 253
CONDENSATE SYSTEM 255
BOILER FEED WTR CONTS 221
CONDENSATE SYSTEM 255
PRESS LEGS & FILL CONN 255
WATER SAMPLE COOLER 255467
CHILLED WATER SYSTEM 514
CONDENSATE SYSTEM 255
DISTILLER DISTILLATE PMP 531
SALINITY IND. SYS. 437
RFW-EFW TANKS 123
AIR SUPPLY 551
DEAERATING FEED TANK 2553
FEED COOLER 255367
MAIN BOOSTER FEED PUMPS 2552
NOTE: PIPING AND VALVES 2555
FILL & XFER CONN
DFT WARM-UP
LO COOLER
TURB
LO PMP
PMP
PRESSURE LINE
RECIRCULTN CONT PANEL 255145
BOILER COMP INJ TANK 2554TE
BILGE 123
BOILER 221
PRESS. LINE
MAIN FEED PMPS AND TURBINES 2551
BOILER 221
BOILER 221
CONTROL AIR 221
PRESS. LINE
RECIRC
H P DRAIN 258
FRESH, WASTE, & OILY WATER DRAINS 534
150 PSIG DSUPRHTR 534
RES. FEED WATER TANK 123
RES. FEED WATER TANK 123
POWER PANEL 342
CONDENSATE SYSTEM 255
BILGE 123
AUXILIARY EXHAUST 534
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
255 FEED AND CONDENSATE SYSTEM


2C F[illegible]
Propulsion Plant
250
Propulsion Support Systems
255 F300
Feed and Condensate System
Does not include:
Main Condenser (254)
SSTG Condensers (311)
Electrical Tank Level Indicators (437)
Motors and Controllers in Group Control Switchboard (322)
Feed Water Tanks (123)
Air Ejector Condensers (254,311)
Distant Reading Instrumentation (436,437)
2556 F30G
Main Condensate System Pumps
EM01
2556M7
Motors-AC
2556Q1 F30G
Pumps-Centrifugal, Motor Driven
25568Z
Switch-Assembly, Light
255647
Controllers-AC
255687
Coupling-Shaft Flexible
2557
Main/Auxiliary Condensate System Piping
2557A4
Valve-Relief
2557GC
Gage-Pressure
2557JZ
Measuring and Indicating Instruments
2557PX
Piping System Hardware
2557VB
Valve-Angle
2557VG
Valve-Butterfly
2557VI
Valve-Globe
2557VJ
Valve-Check
Includes:
Check Swing
Check lift
2557VL
Valve-Diaphram Controlled, Pilot Operated
2557VR
Valve-Gate
2557V5
Manifold-2 Valve
2557V7
Valve-Temperature Regulating
255745
Control-Press. Temp. Level and Flow
Includes:
Control-Liquid level
Control-Positioner
2558 310E
Auxiliary Condensate System Pumps
EM08
2558M7
Motor-AC
2558Q1
Pumps-Centrifugal Motor Driven
25584[illegible]
Controller-AC
25588[illegible]
Coupling-Shaft Flexible
FF-1052 Class
Prepared 7-19-76


POWER PANEL 324
LOCALLY & REMOTELY OPERATED FROM ENGINE ROOM CONTROL STATION
DISTILLED SW HEATER DRAIN PUMP 531
F/W DRAIN TANK PUMP DISCHARGE 534
AIR
MAIN CONDENSER 254
GLAND SEAL
VENT
MAIN CONDENSATE PUMPS 255b
GLAND SEAL
MN AIR EJECTOR 254
PRAIRIE MASKER COMPRESSOR TANK FILL 551
FEED WATER COOLER 255
MFP + BFP RECIRCULATION 255
P
VENT CONDENSER 255
DE-AERATING FEED TANK 255
MAIN CONDENSER FILL
EXCESS FEED
VARIABLE PRESSURE LEG
CONSTANT PRESSURE LEG
CONSTANT PRESSURE LEG FILL
BOILER COMP INJ FILL 255
RFW - EFW TANKS 183
CONTROL AIR 553
VACUUM DRAG
F/W DRAIN TANK 534
MAKE-UP FEED
DFT WARM-UP
SSTG CONDENSER FILL
SALINITY INDICATOR SYSTEM 437
FEED SYSTEM 255
SSTG AUXILIARY CONDENSER 311
OTHER SSTG AIR EJ
AIR
VENT
AUX COND PUMP 255B
VP
AUXILIARY AIR EJECTOR 311
POWER PANEL 324
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
255 FEED AND CONDENSATE SYSTEM

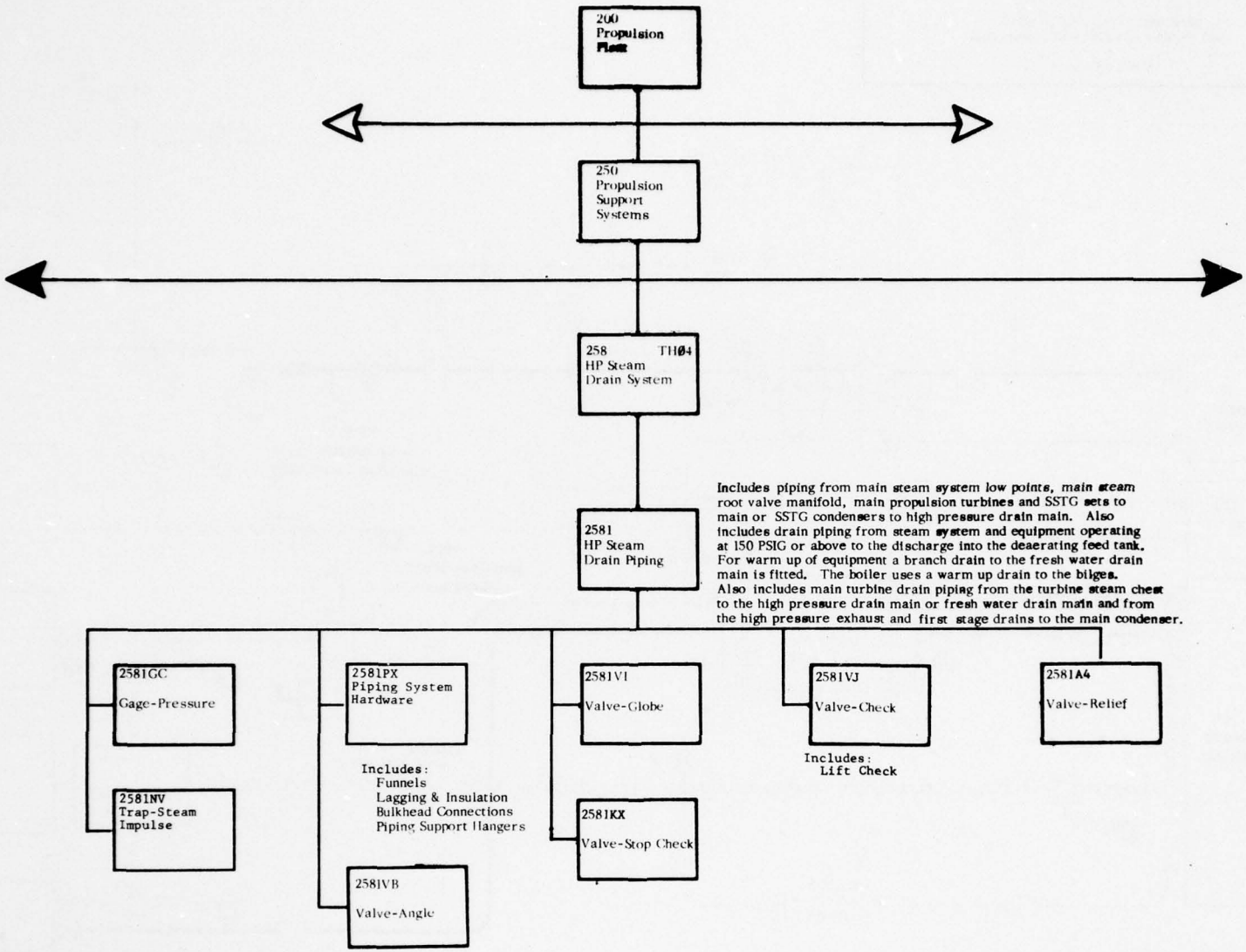

2561 FB01
Main Condenser Circulating Pump
EM01
2561M7
Motor-AC
256112
Pump-Centrifugal
25618Z
Switch-Assembly Light
256147
Controller
2562 FB04
Main Condenser Circulating Sea Water System Piping
EM01
Includes piping, pumps and components making up the main condenser circulating salt water system and branch line supply to main lube oil cooler. Also includes emergency bilge suction piping.
Does not include:
Condenser Injection Scoop or Overboard Discharge (163)
Distant Reading Instrumentation (436, 437)
Main condenser (254)
Auxiliary Sea Water System (524)
2562GC
Gage-Pressure
2562JS
Indicator-Sight, Liquid
2562JZ
Measuring and Indicating Instruments
2562LE
Light-Indicating
2562M7
Motor-AC Valve Operation
2562PX
Piping System Hardware
Includes:
Strainer Box
Expansion Joints
Hose Adapters
2562VB
Valve-Angle
2562VG
Valve-Butterfly
2562VI
Valve-Globe
2562KX
Valve-Stop Check
2562VJ
Valve-Check
2562VR
Valve-Gate
2562A4
Valve-Relief
256247
Controller
256252
Switch-Light
2563 310E
Auxiliary Condenser Circulating Water Pumps
EM08
2563M7
Motor-AC
25633N
Pump Centrifugal
256347
Controller
2564 310E
SSTG Condenser Circulating Sea Water System Piping
EM08
Includes piping, pumps, and components making up the SSTG auxiliary condenser circulating salt water system and associated branch lines supplying SSTG lube oil cooling and generator air coolers. Also includes emergency bilge suction piping.
Does not include:
SSTG Condensate System (255)
Auxiliary Condensers (254)
Auxiliary Sea Water System (524)
2564GC
Gage-Pressure
2564GI
Operating Gear-Valve
2564JZ
Measuring and Indicating Instruments
2564PX
Piping System Hardware
Includes:
Flexible Hose
Strainer Box
2564VR
Valve-Gate
2564VB
Valve-Angle
2564VG
Valve-Butterfly
2564KX
Valve-Stop Check
2564A4
Valve-Relief
2564ZY
Strainer-Duplex
FF-1052 Class
Prepared 7-19-76



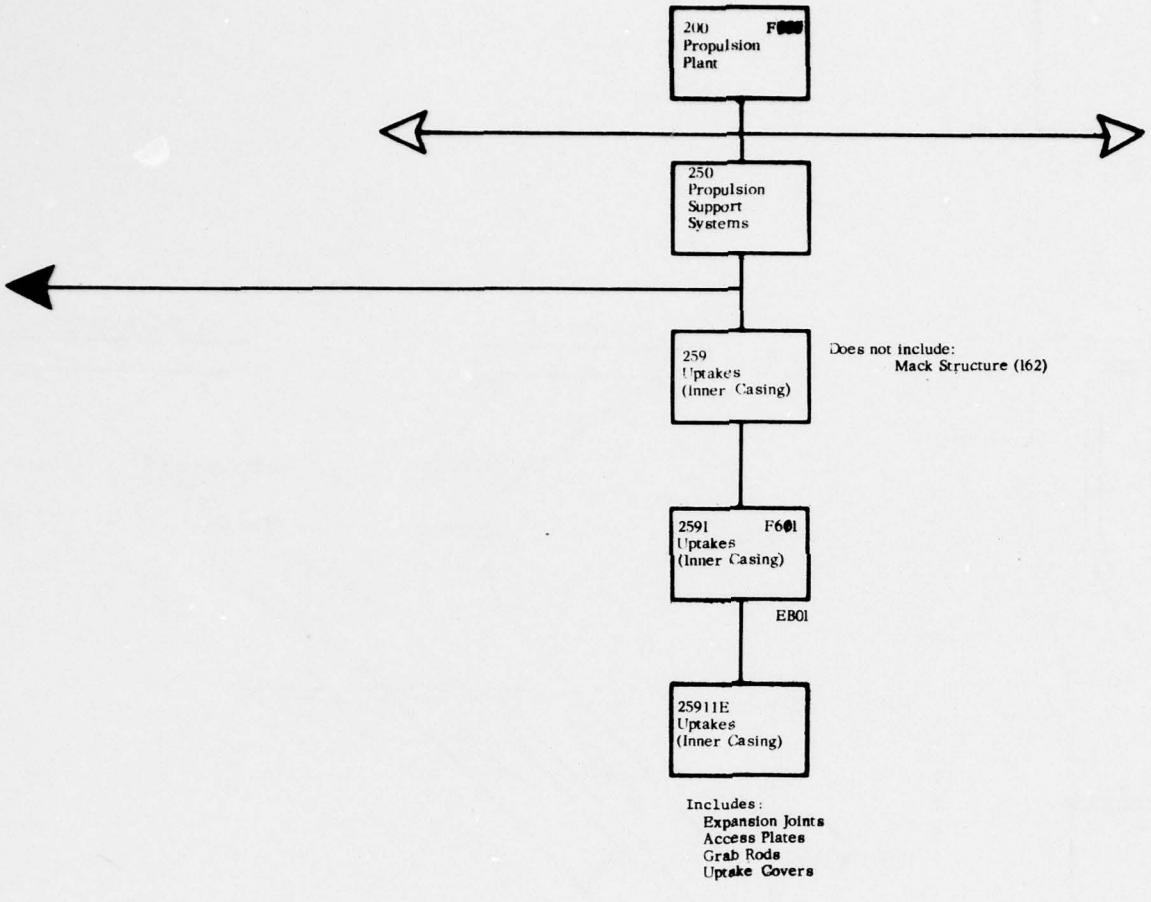
FF-1052 CLASS

SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

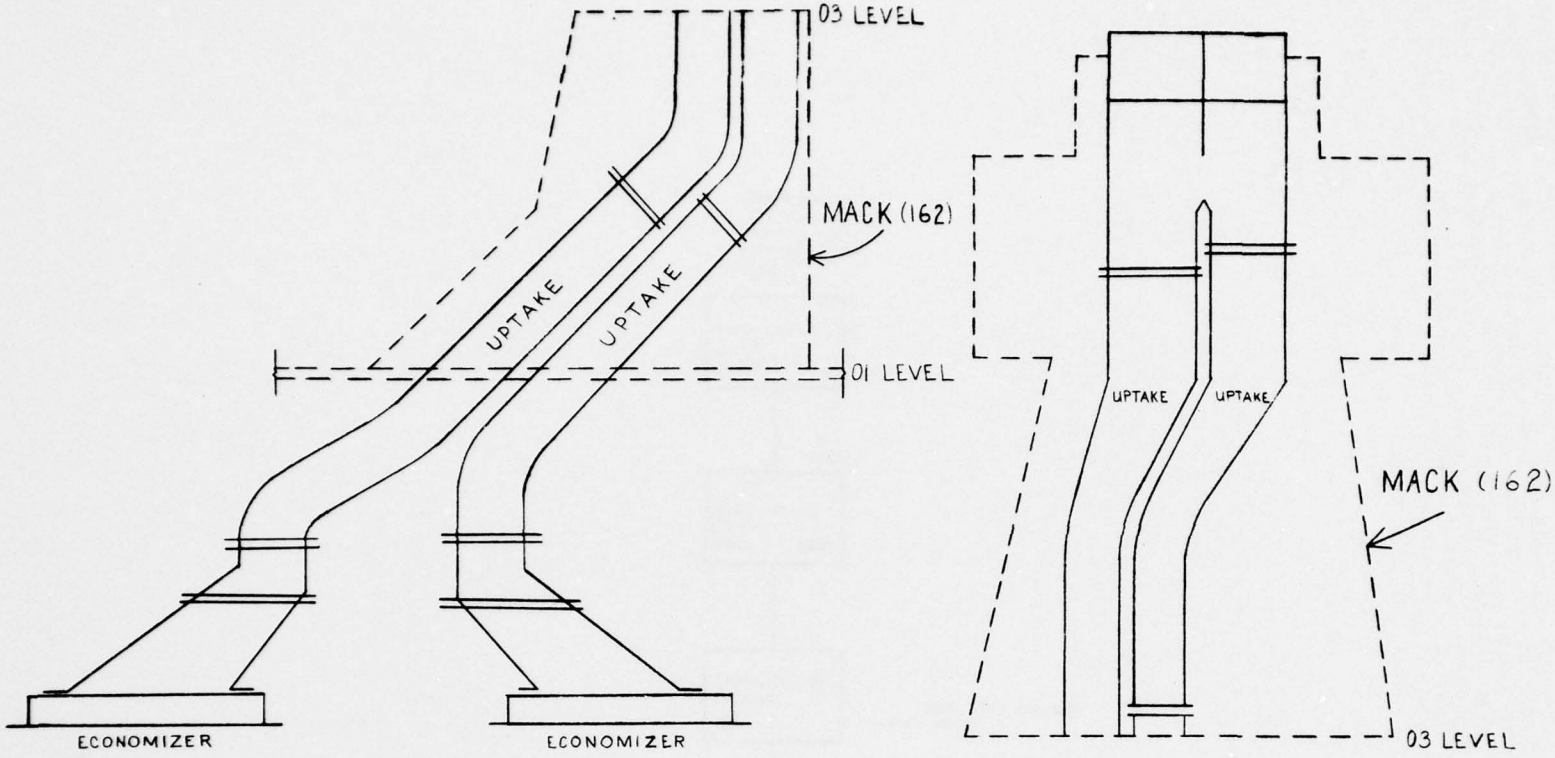
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
256 CIRCULATING AND COOLING WATER SEA SYSTEMS



FF-1052 Class
Prepared 7-19-76



FF-1052 Class
Prepared 7-19-76

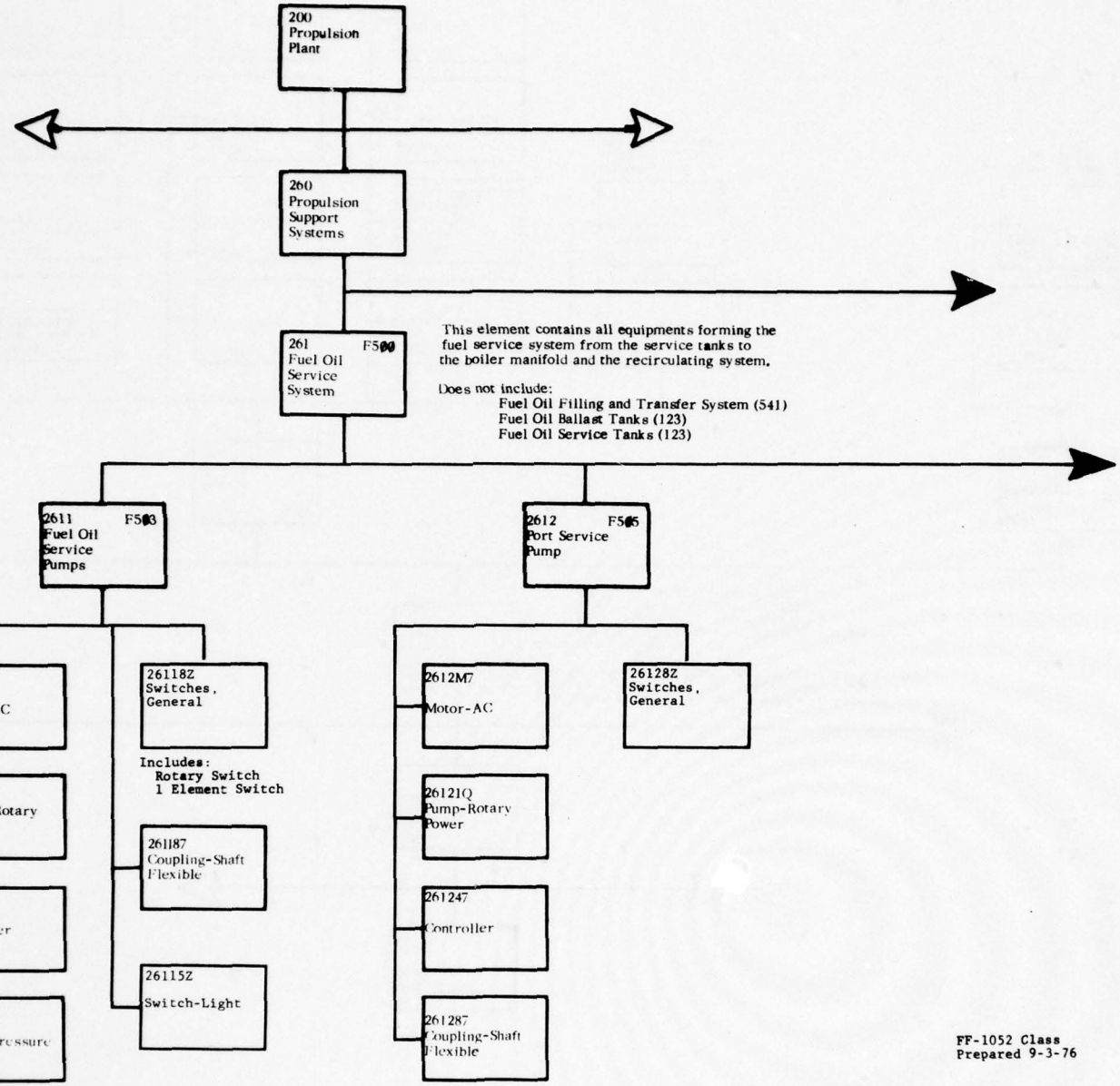


259 UPTAKES

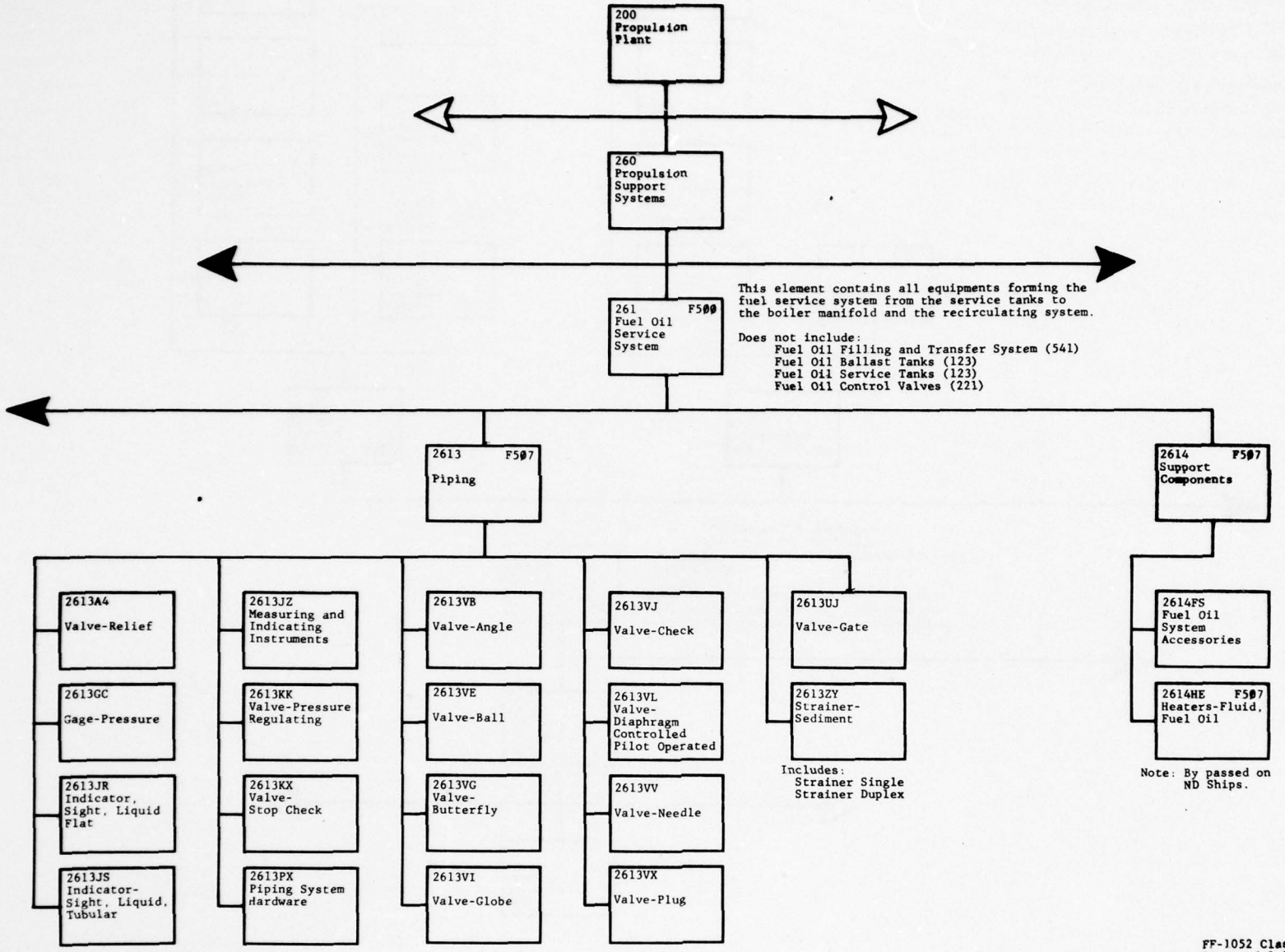
FF-1052 CLASS

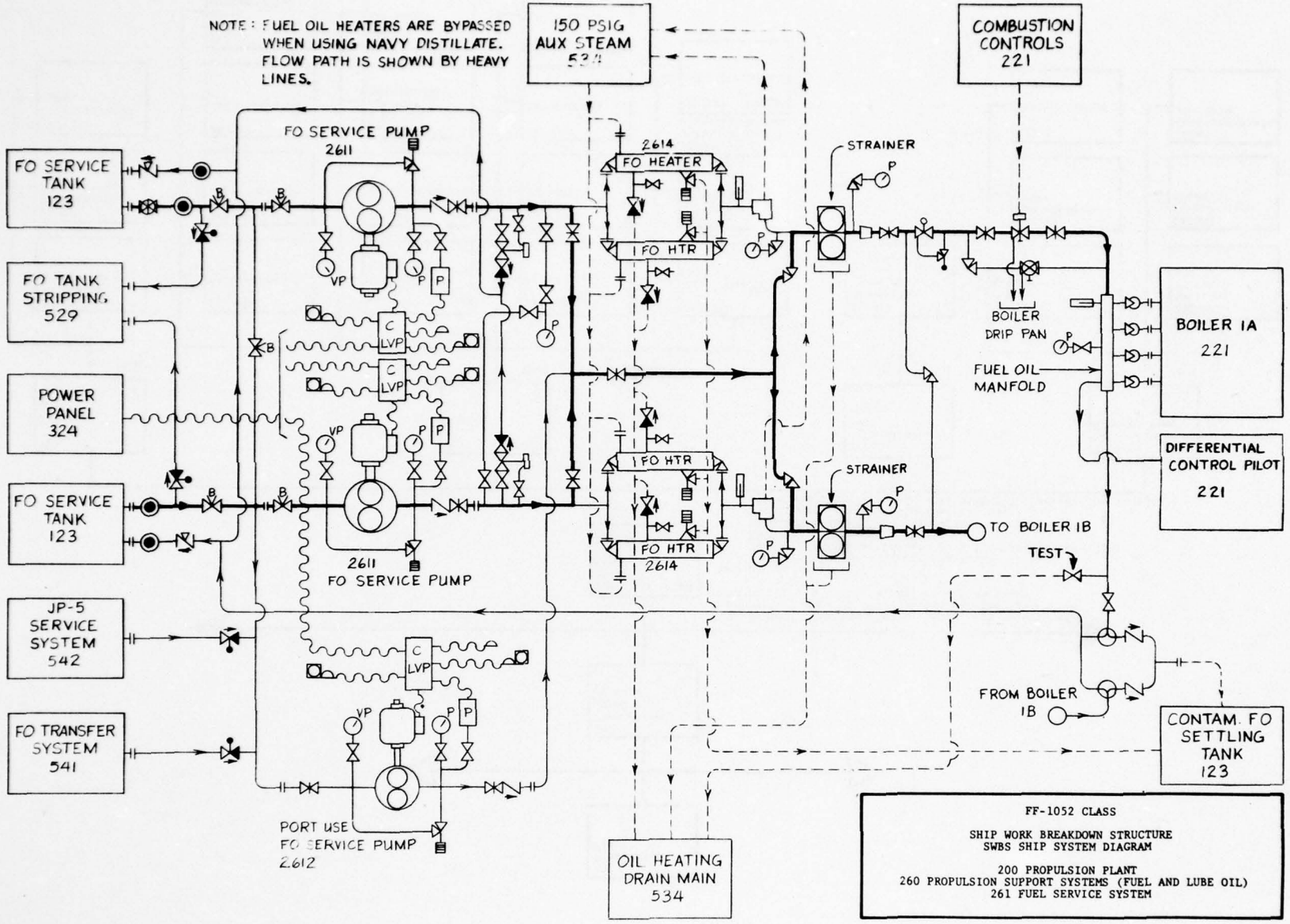
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

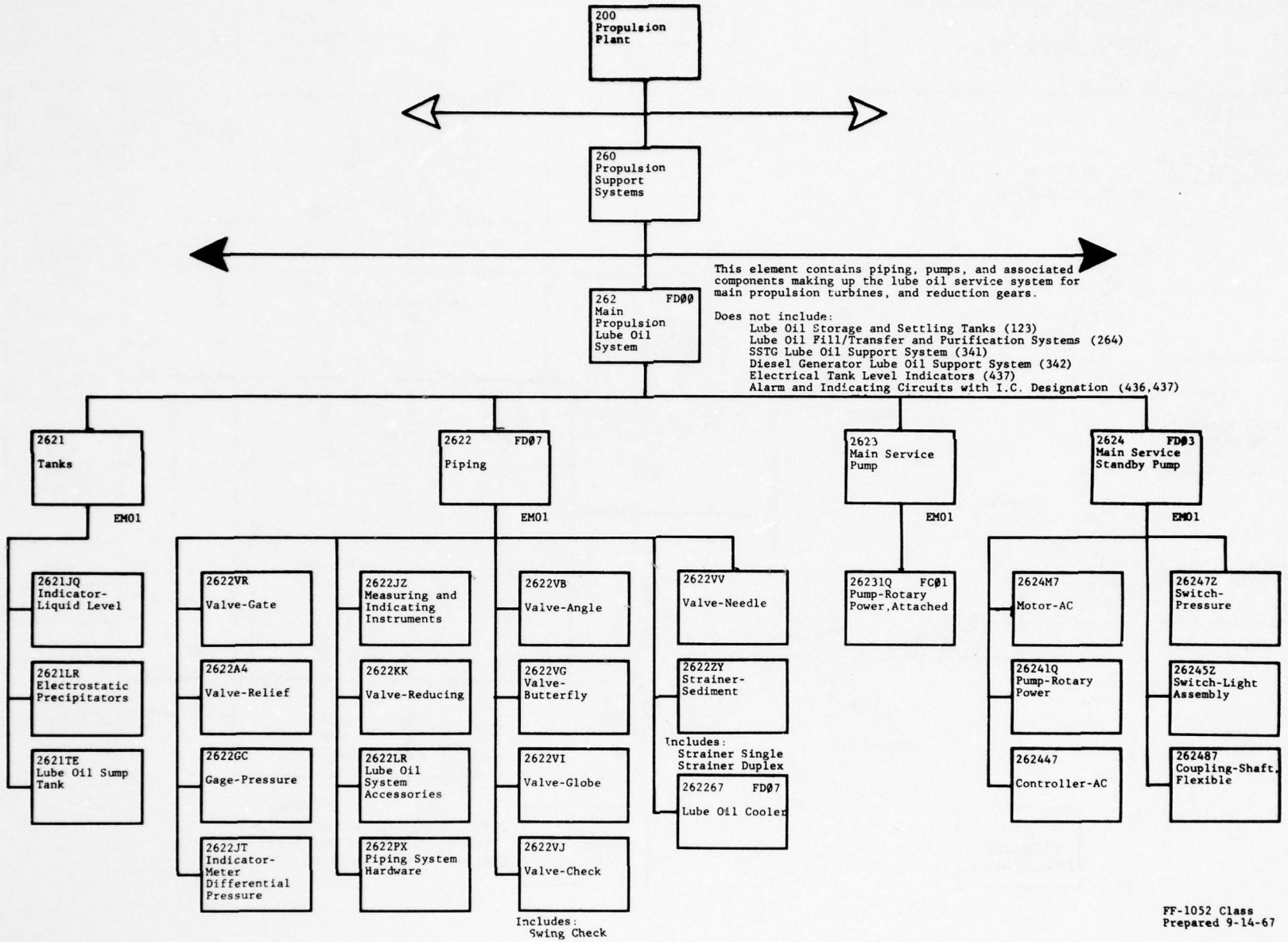
200 PROPULSION PLANT
250 PROPULSION SUPPORT SYSTEMS
259 UPTAKES (INNER CASING)

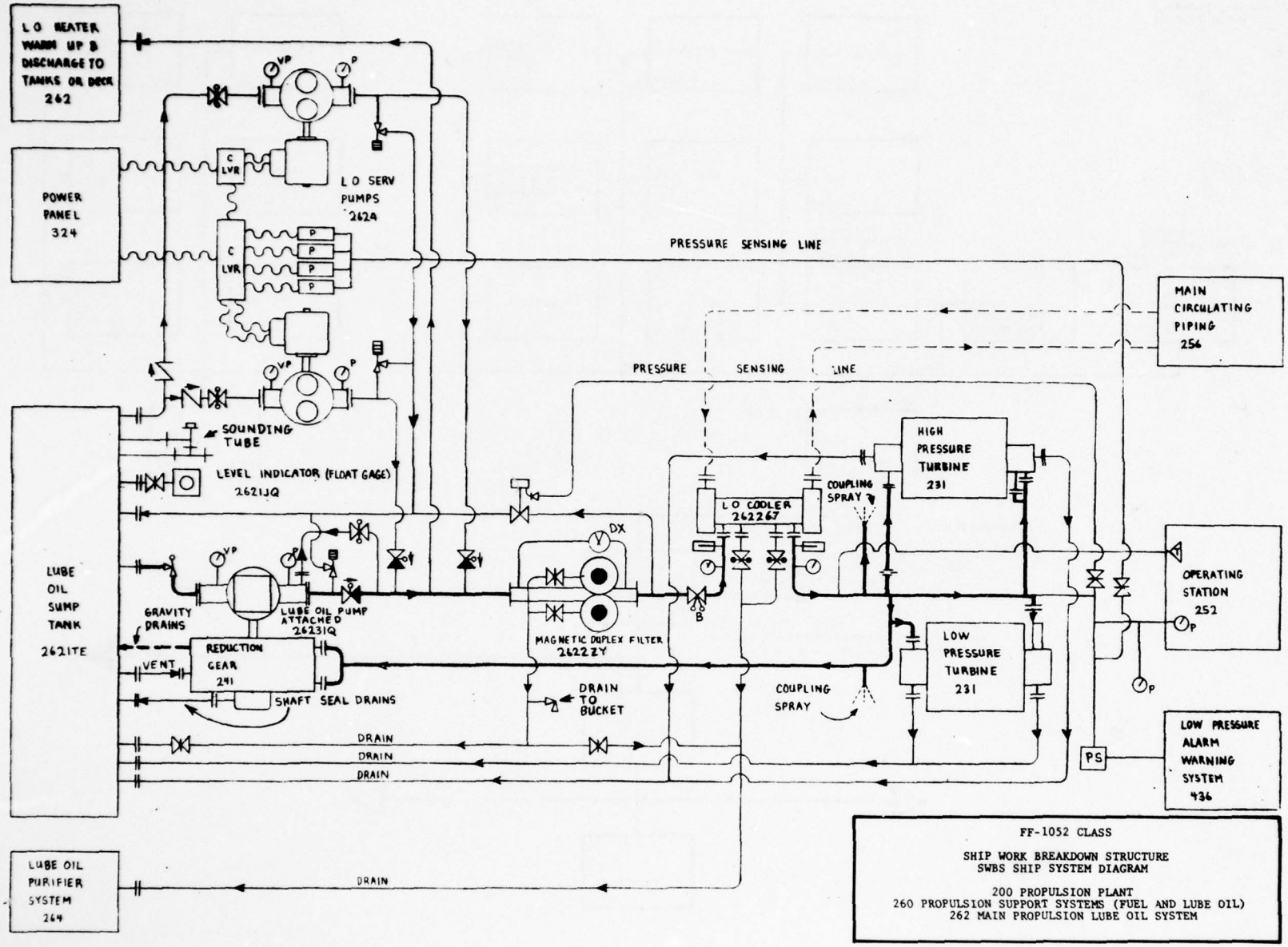


FF-1052 Class
Prepared 9-3-76


200
Propulsion Plant
260
Propulsion Support Systems
261 F500
Fuel Oil Service System
This element contains all equipments forming the fuel service system from the service tanks to the boiler manifold and the recirculating system.
Does not include:
Fuel Oil Filling and Transfer System (541)
Fuel Oil Ballast Tanks (123)
Fuel Oil Service Tanks (123)
Fuel Oil Control Valves (221)
2613 F507
Piping
2614 F507
Support Components
2613A4
Valve-Relief
2613GC
Gage-Pressure
2613JR
Indicator, Sight, Liquid Flat
2613JS
Indicator-Sight, Liquid, Tubular
2613JZ
Measuring and Indicating Instruments
2613KK
Valve-Pressure Regulating
2613KX
Valve-Stop Check
2613PX
Piping System Hardware
2613VB
Valve-Angle
2613VE
Valve-Ball
2613VG
Valve-Butterfly
2613VI
Valve-Globe
2613VJ
Valve-Check
2613VL
Valve-Diaphragm Controlled Pilot Operated
2613VV
Valve-Needle
2613VX
Valve-Plug
2613UJ
Valve-Gate
2613ZY
Strainer-Sediment
Includes:
Strainer Single
Strainer Duplex
2614FS
Fuel Oil System Accessories
2614HE F507
Heaters-Fluid, Fuel Oil
Note: By passed on ND Ships.
FF-1052 Class
Prepared 9-14-76


NOTE: FUEL OIL HEATERS ARE BYPASSED WHEN USING NAVY DISTILLATE. FLOW PATH IS SHOWN BY HEAVY LINES.
150 PSIG AUX STEAM 534
COMBUSTION CONTROLS 221
FO SERVICE TANK 123
FO TANK STRIPPING 529
POWER PANEL 324
FO SERVICE TANK 123
JP-5 SERVICE SYSTEM 542
FO TRANSFER SYSTEM 541
FO SERVICE PUMP 2611
2614 FO HEATER
FO HTR
STRAINER
BOILER DRIP PAN
FUEL OIL MANFOLD
BOILER 1A 221
DIFFERENTIAL CONTROL PILOT 221
TO BOILER 1B
TEST
FROM BOILER 1B
CONTAM. FO SETTLING TANK 123
2611 FO SERVICE PUMP
PORT USE FO SERVICE PUMP 2612
OIL HEATING DRAIN MAIN 534
FF-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
200 PROPULSION PLANT
260 PROPULSION SUPPORT SYSTEMS (FUEL AND LUBE OIL)
261 FUEL SERVICE SYSTEM

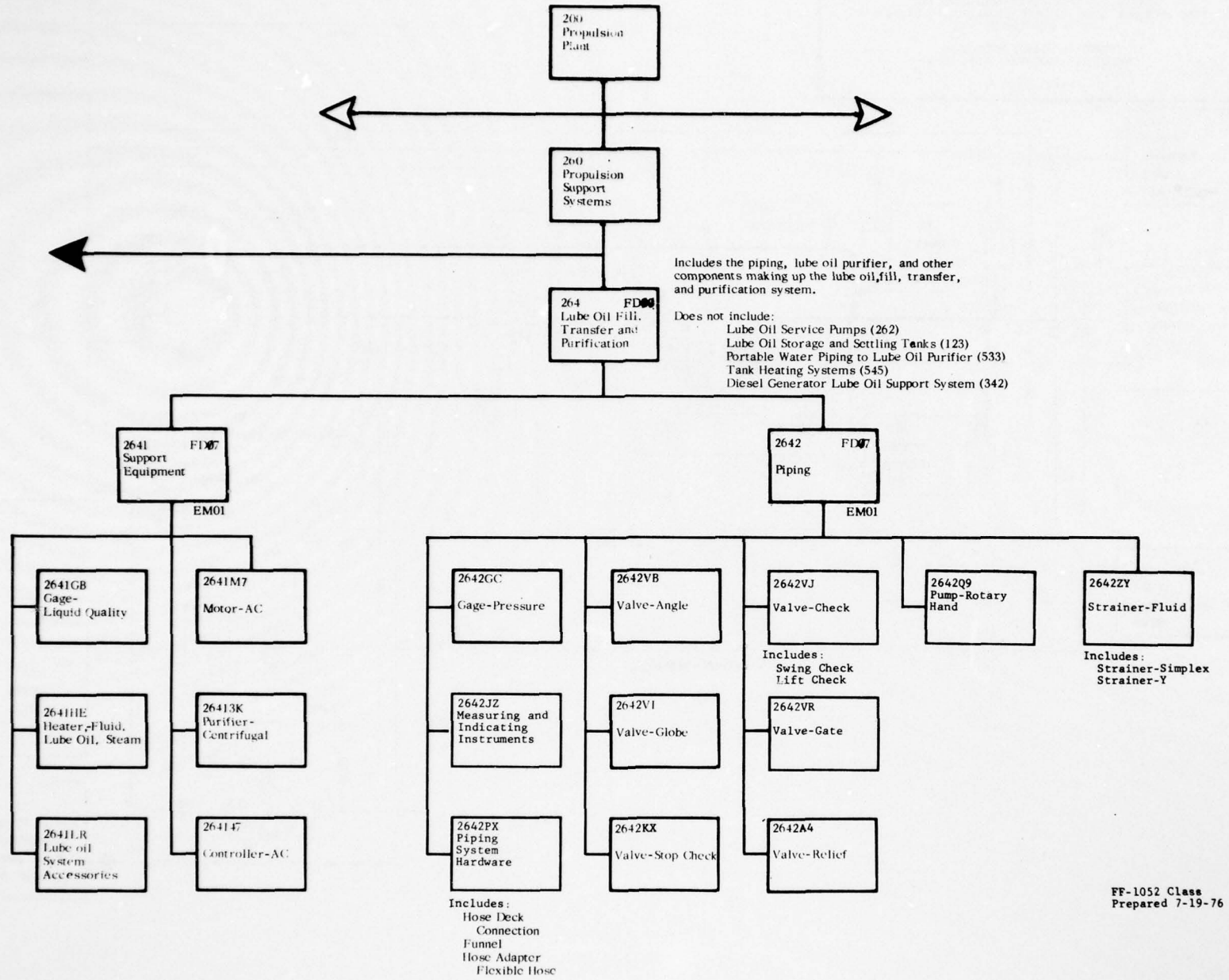

200
Propulsion Plant
260
Propulsion Support Systems
262 FD00
Main Propulsion Lube Oil System
This element contains piping, pumps, and associated components making up the lube oil service system for main propulsion turbines, and reduction gears.
Does not include:
Lube Oil Storage and Settling Tanks (123)
Lube Oil Fill/Transfer and Purification Systems (264)
SSTG Lube Oil Support System (341)
Diesel Generator Lube Oil Support System (342)
Electrical Tank Level Indicators (437)
Alarm and Indicating Circuits with I.C. Designation (436,437)
2621
Tanks
EM01
2621JQ
Indicator-Liquid Level
2621LR
Electrostatic Precipitators
2621TE
Lube Oil Sump Tank
2622 FD07
Piping
EM01
2622VR
Valve-Gate
2622A4
Valve-Relief
2622GC
Gage-Pressure
2622JT
Indicator-Meter Differential Pressure
2622JZ
Measuring and Indicating Instruments
2622KK
Valve-Reducing
2622LR
Lube Oil System Accessories
2622PX
Piping System Hardware
2622VB
Valve-Angle
2622VG
Valve-Butterfly
2622VI
Valve-Globe
2622VJ
Valve-Check
Includes:
Swing Check
2622VV
Valve-Needle
2622ZY
Strainer-Sediment
Includes:
Strainer Single
Strainer Duplex
262267 FD07
Lube Oil Cooler
2623
Main Service Pump
EM01
26231Q FC01
Pump-Rotary Power,Attached
2624 FD03
Main Service Standby Pump
EM01
2624M7
Motor-AC
26241Q
Pump-Rotary Power
262447
Controller-AC
26247Z
Switch-Pressure
26245Z
Switch-Light Assembly
262487
Coupling-Shaft, Flexible
FF-1052 Class
Prepared 9-14-67



FF-1052 CLASS

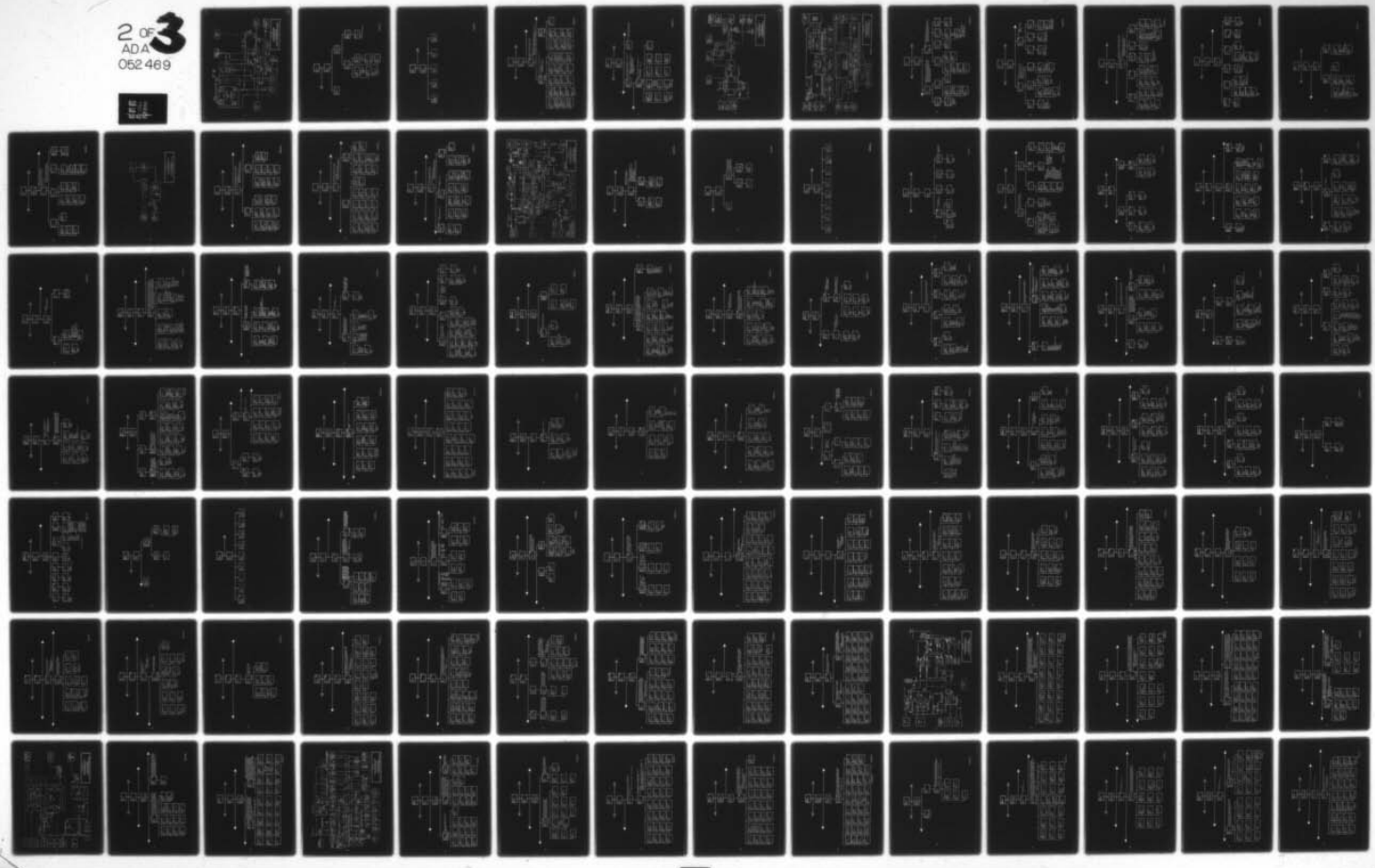
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

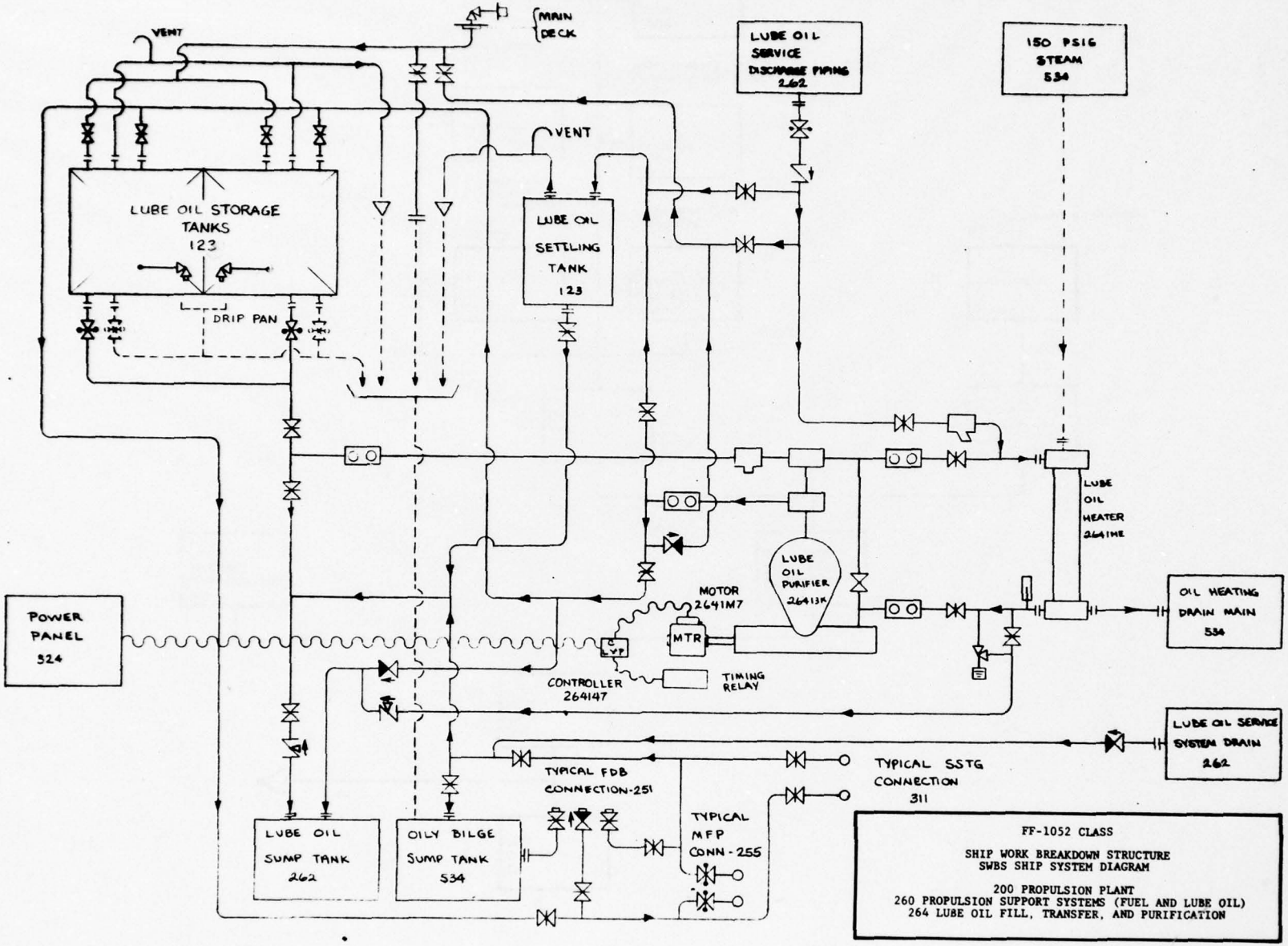
200 PROPULSION PLANT
260 PROPULSION SUPPORT SYSTEMS (FUEL AND LUBE OIL)
262 MAIN PROPULSION LUBE OIL SYSTEM


200
Propulsion Plant
260
Propulsion Support Systems
264 FD07
Lube Oil Fill, Transfer and Purification
Includes the piping, lube oil purifier, and other components making up the lube oil,fill, transfer, and purification system.
Does not include:
Lube Oil Service Pumps (262)
Lube Oil Storage and Settling Tanks (123)
Portable Water Piping to Lube Oil Purifier (533)
Tank Heating Systems (545)
Diesel Generator Lube Oil Support System (342)
2641 FD07
Support Equipment
EM01
2642 FD07
Piping
EM01
2641GB
Gage-Liquid Quality
2641HE
Heater,-Fluid, Lube Oil, Steam
2641LR
Lube oil System Accessories
2641M7
Motor-AC
26413K
Purifier-Centrifugal
264147
Controller-AC
2642GC
Gage-Pressure
2642JZ
Measuring and Indicating Instruments
2642PX
Piping System Hardware
Includes:
Hose Deck Connection
Funnel
Hose Adapter
Flexible Hose
2642VB
Valve-Angle
2642VI
Valve-Globe
2642KX
Valve-Stop Check
2642VJ
Valve-Check
Includes:
Swing Check
Lift Check
2642VR
Valve-Gate
2642A4
Valve-Relief
2642Q9
Pump-Rotary Hand
2642ZY
Strainer-Fluid
Includes:
Strainer-Simplex
Strainer-Y
FF-1052 Class
Prepared 7-19-76

AD-A052 469 ARINC RESEARCH CORP ANNAPOLIS MD F/G 13/10
SHIP SYSTEMS DEFINITION AND INDEX (SWBS STAGING DIAGRAMS) FOR F--ETC(U)
OCT 76 N00140-76-D-0813
UNCLASSIFIED 1804-01-1-1547 NL

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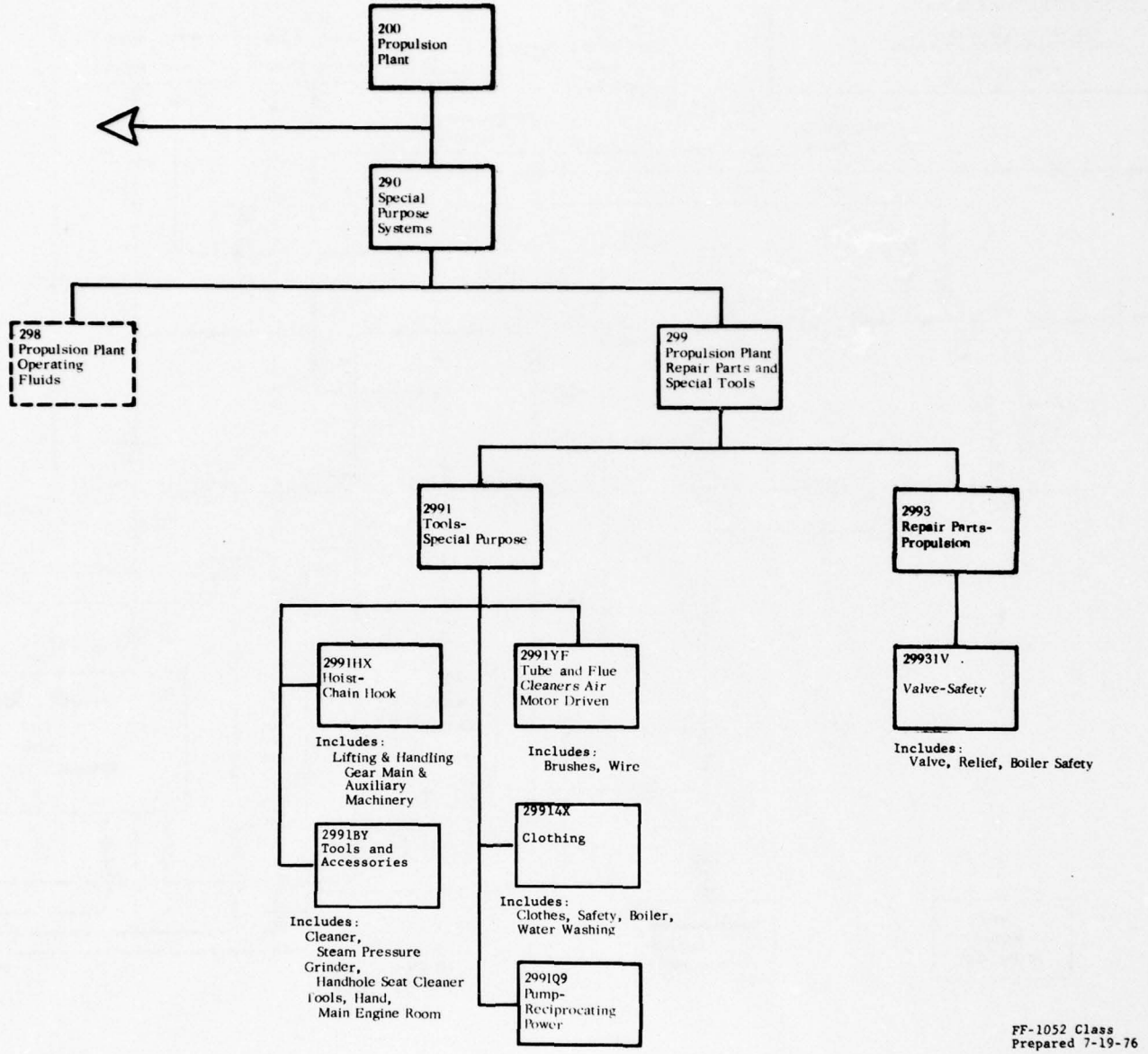




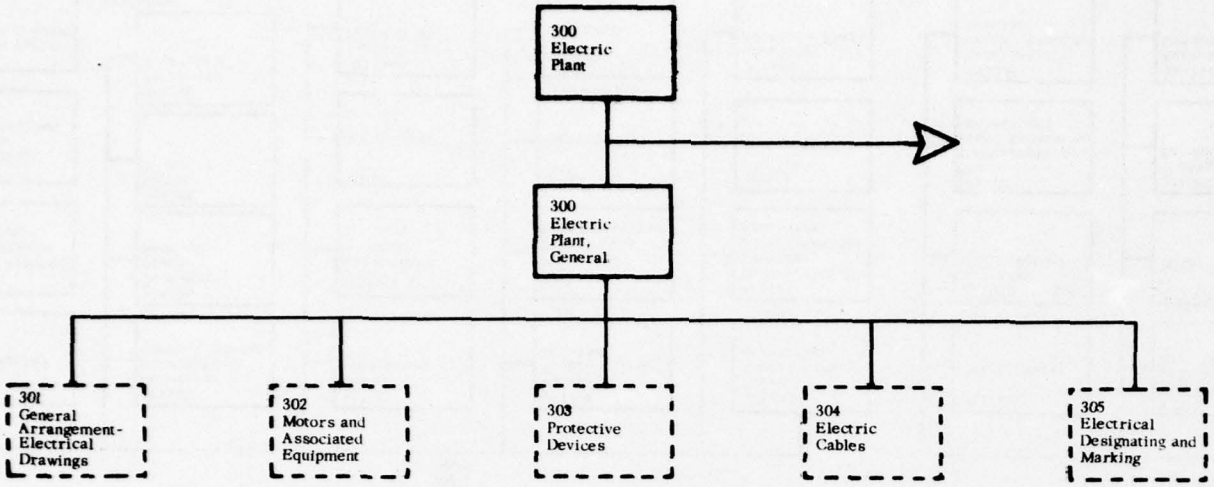
FF-1052 CLASS

SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

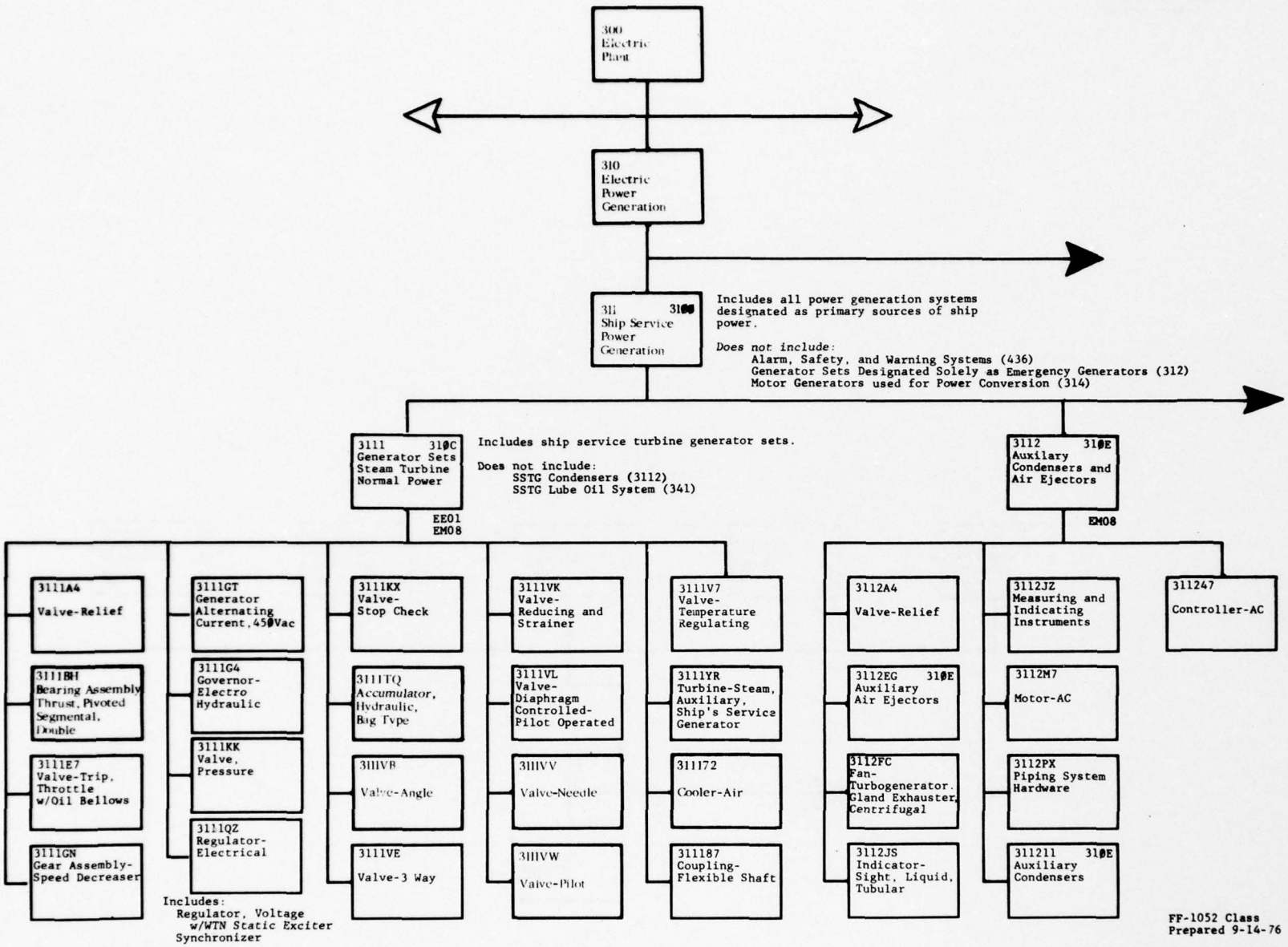
200 PROPULSION PLANT
260 PROPULSION SUPPORT SYSTEMS (FUEL AND LUBE OIL)
264 LUBE OIL FILL, TRANSFER, AND PURIFICATION

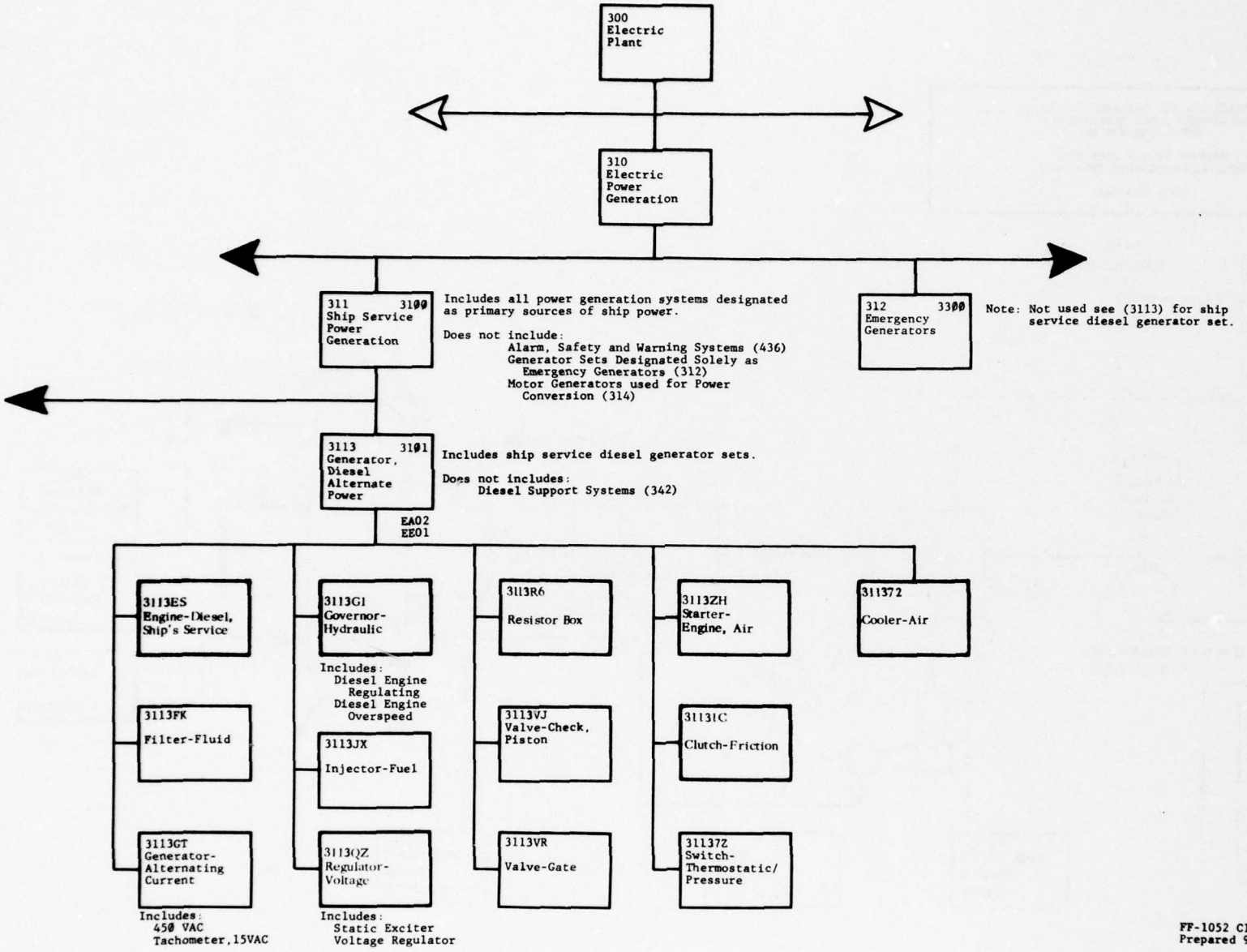


FF-1052 Class
Prepared 7-19-76

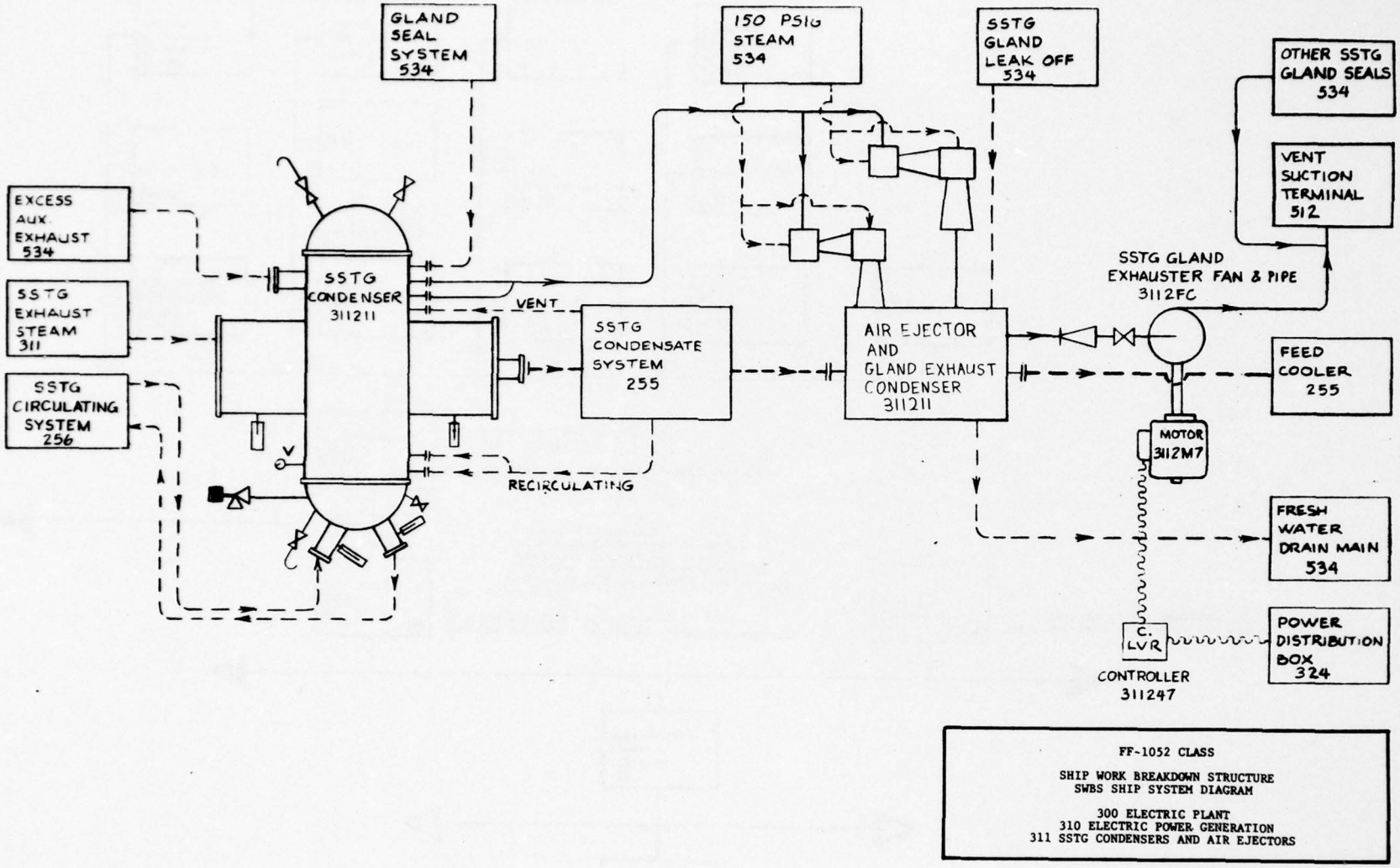


FF-1052 Class
Prepared-9-14-76


300
Electric
Plant
310
Electric
Power
Generation
311 310
Ship Service
Power
Generation
Includes all power generation systems designated as primary sources of ship power.
Does not include:
Alarm, Safety, and Warning Systems (436)
Generator Sets Designated Solely as Emergency Generators (312)
Motor Generators used for Power Conversion (314)
3111 310C
Generator Sets
Steam Turbine
Normal Power
Includes ship service turbine generator sets.
Does not include:
SSTG Condensers (3112)
SSTG Lube Oil System (341)
EE01
EM08
3112 310E
Auxilary
Condensers and
Air Ejectors
EM08
3111A4
Valve-Relief
3111BH
Bearing Assembly
Thrust, Pivoted
Segmental,
Double
3111E7
Valve-Trip,
Throttle
w/Oil Bellows
3111GN
Gear Assembly-
Speed Decreaser
3111GT
Generator
Alternating
Current, 450Vac
3111G4
Governor-
Electro
Hydraulic
3111KK
Valve,
Pressure
3111QZ
Regulator-
Electrical
Includes:
Regulator, Voltage
w/WTN Static Exciter
Synchronizer
3111KX
Valve-
Stop Check
3111TQ
Accumulator,
Hydraulic,
Bag Type
3111VB
Valve-Angle
3111VE
Valve-3 Way
3111VK
Valve-
Reducing and
Strainer
3111VL
Valve-
Diaphragm
Controlled-
Pilot Operated
3111VV
Valve-Needle
3111VW
Valve-Pilot
3111V7
Valve-
Temperature
Regulating
3111YR
Turbine-Steam,
Auxiliary,
Ship's Service
Generator
311172
Cooler-Air
311187
Coupling-
Flexible Shaft
3112A4
Valve-Relief
3112EG 310E
Auxiliary
Air Ejectors
3112FC
Fan-
Turbogenerator.
Gland Exhauster,
Centrifugal
3112JS
Indicator-
Sight, Liquid,
Tubular
3112JZ
Measuring and
Indicating
Instruments
3112M7
Motor-AC
3112PX
Piping System
Hardware
311211 310E
Auxiliary
Condensers
311247
Controller-AC
FF-1052 Class
Prepared 9-14-76



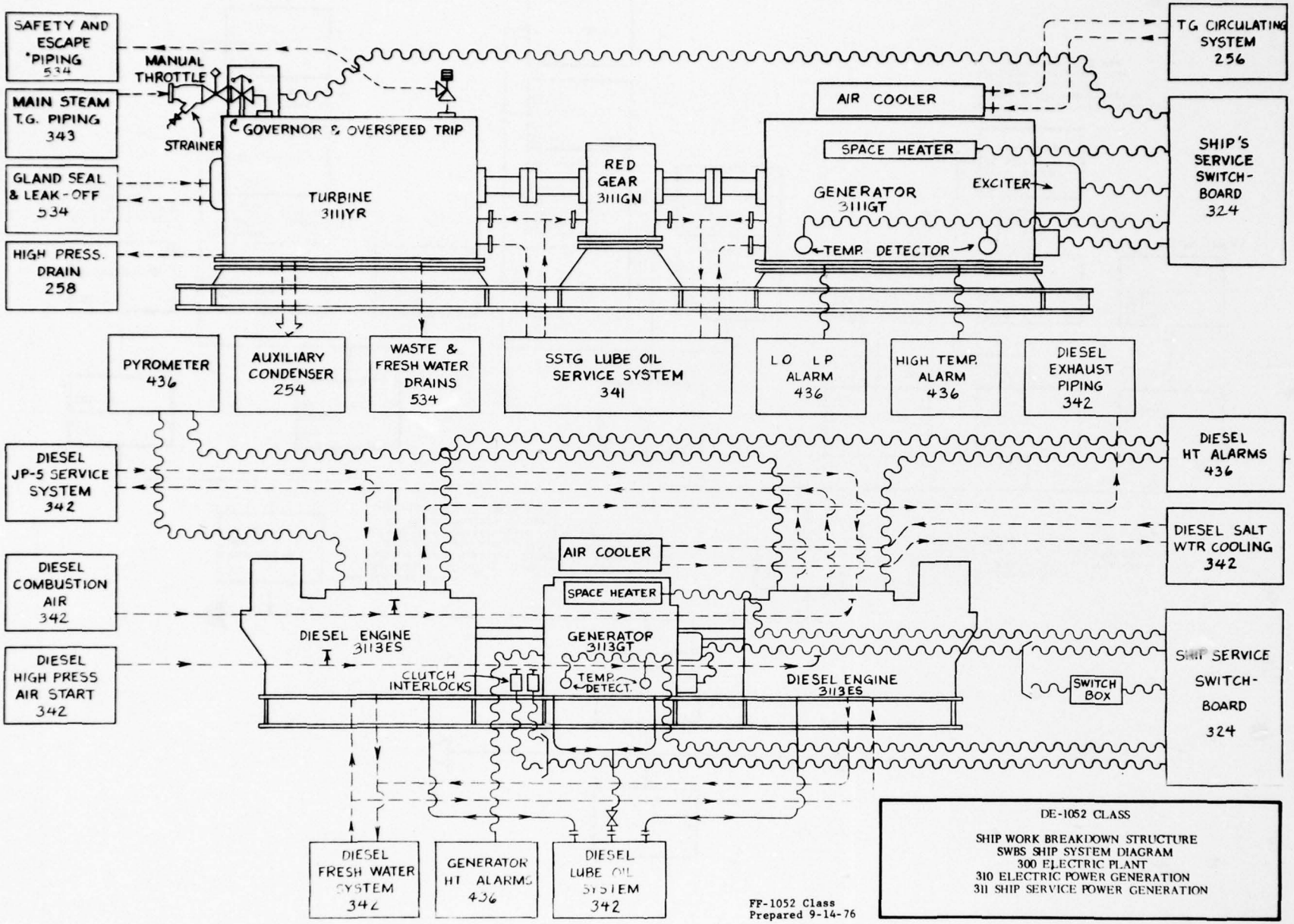
FF-1052 Class
Prepared 9-14-76

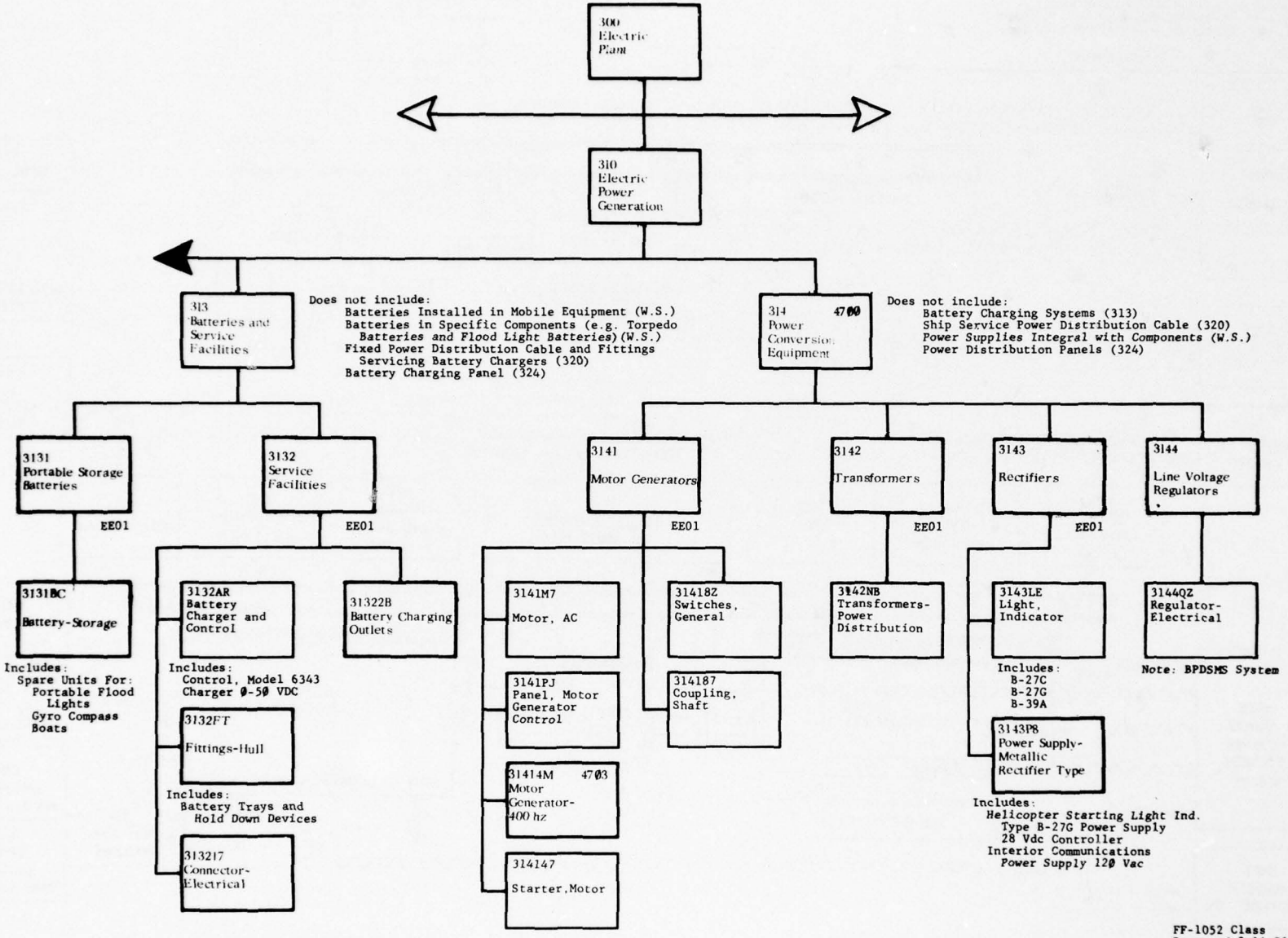


FF-1052 CLASS

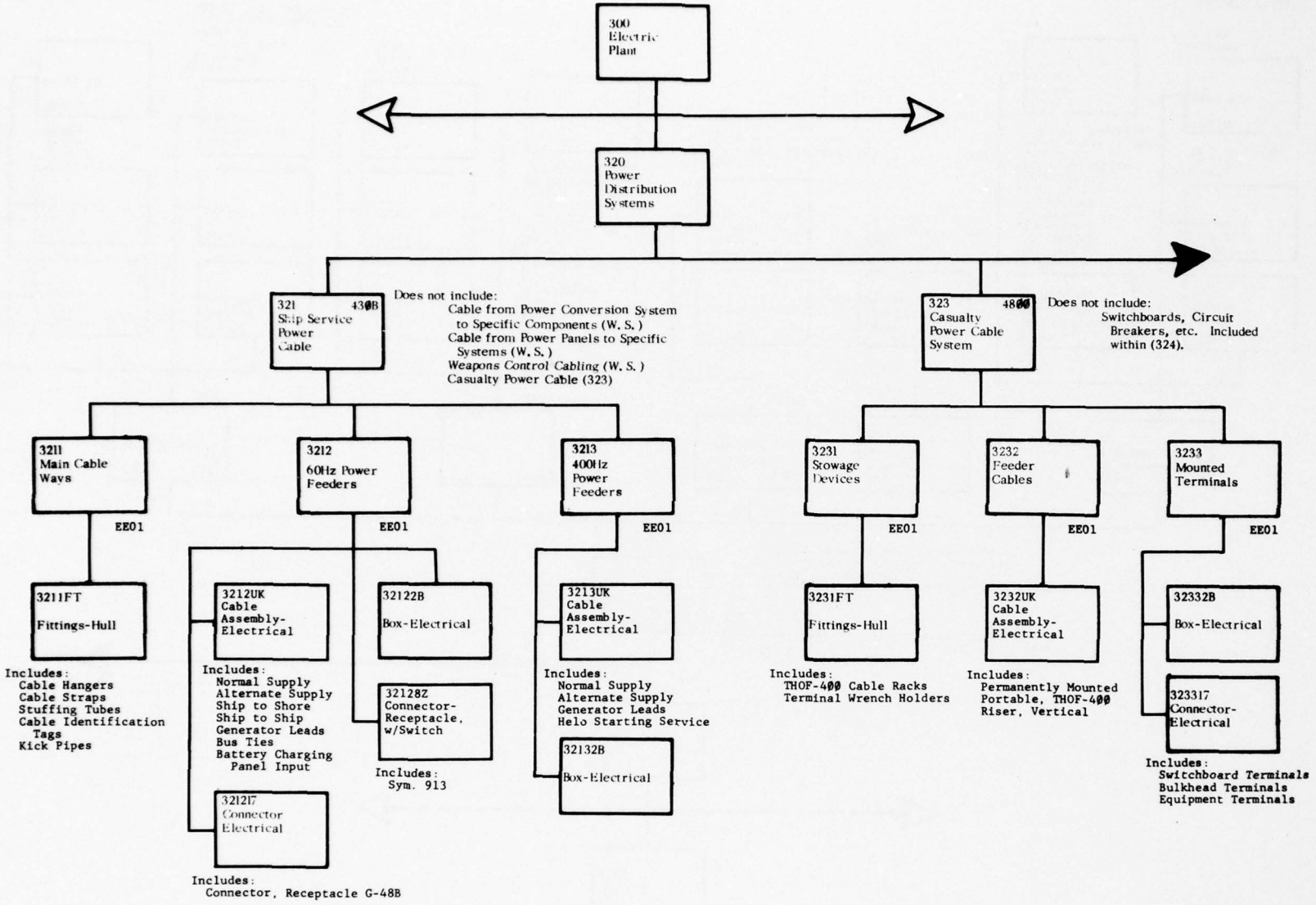
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

300 ELECTRIC PLANT
310 ELECTRIC POWER GENERATION
311 SSTG CONDENSERS AND AIR EJECTORS

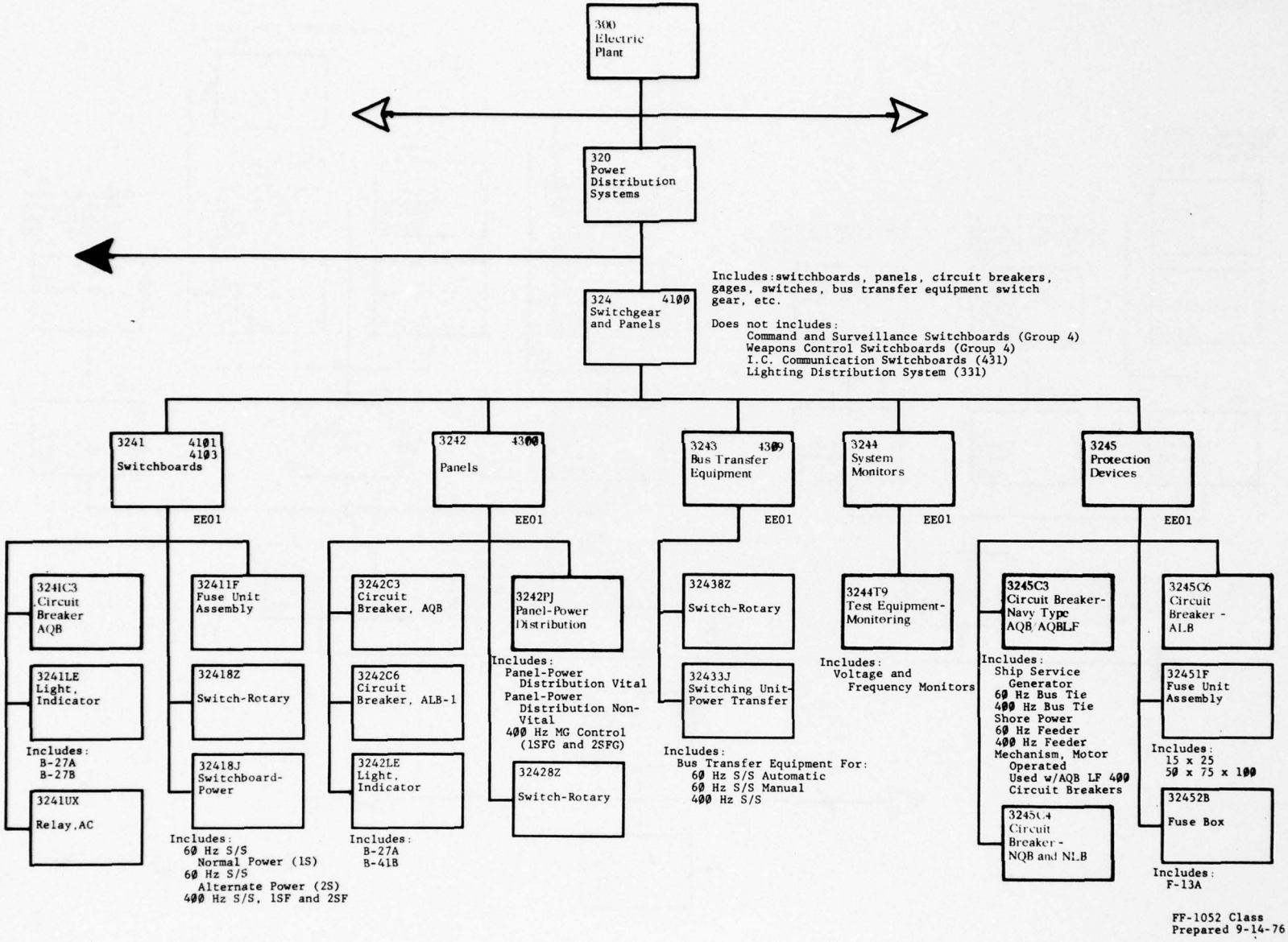

SAFETY AND ESCAPE PIPING 534
MANUAL THROTTLE
MAIN STEAM T.G. PIPING 343
STRAINER
GOVERNOR & OVERSPEED TRIP
GLAND SEAL & LEAK-OFF 534
TURBINE 3111YR
HIGH PRESS. DRAIN 258
RED GEAR 3111GN
AIR COOLER
SPACE HEATER
GENERATOR 3111GT
EXCITER
TEMP. DETECTOR
T.G. CIRCULATING SYSTEM 256
SHIP'S SERVICE SWITCH-BOARD 324
PYROMETER 436
AUXILIARY CONDENSER 254
WASTE & FRESH WATER DRAINS 534
SSTG LUBE OIL SERVICE SYSTEM 341
LO LP ALARM 436
HIGH TEMP. ALARM 436
DIESEL EXHAUST PIPING 342
DIESEL HT ALARMS 436
DIESEL JP-5 SERVICE SYSTEM 342
DIESEL SALT WTR COOLING 342
AIR COOLER
SPACE HEATER
DIESEL COMBUSTION AIR 342
DIESEL ENGINE 3113ES
GENERATOR 3113GT
DIESEL HIGH PRESS AIR START 342
CLUTCH INTERLOCKS
TEMP. DETECT.
DIESEL ENGINE 3113ES
SWITCH BOX
SHIP SERVICE SWITCH-BOARD 324
DIESEL FRESH WATER SYSTEM 342
GENERATOR HT ALARMS 436
DIESEL LUBE OIL SYSTEM 342
FF-1052 Class
Prepared 9-14-76
DE-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
300 ELECTRIC PLANT
310 ELECTRIC POWER GENERATION
311 SHIP SERVICE POWER GENERATION



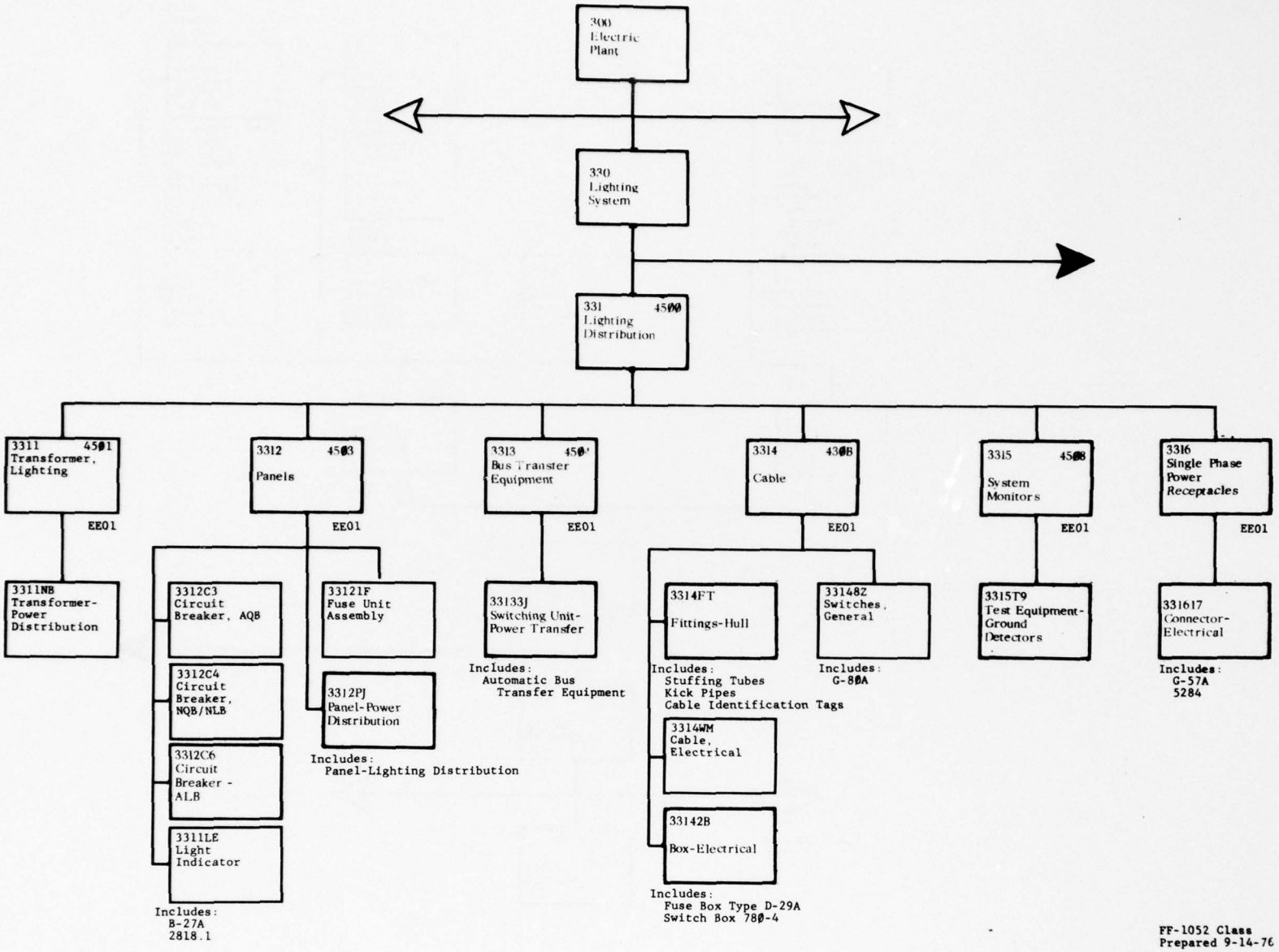
FF-1052 Class
Prepared 9-14-76



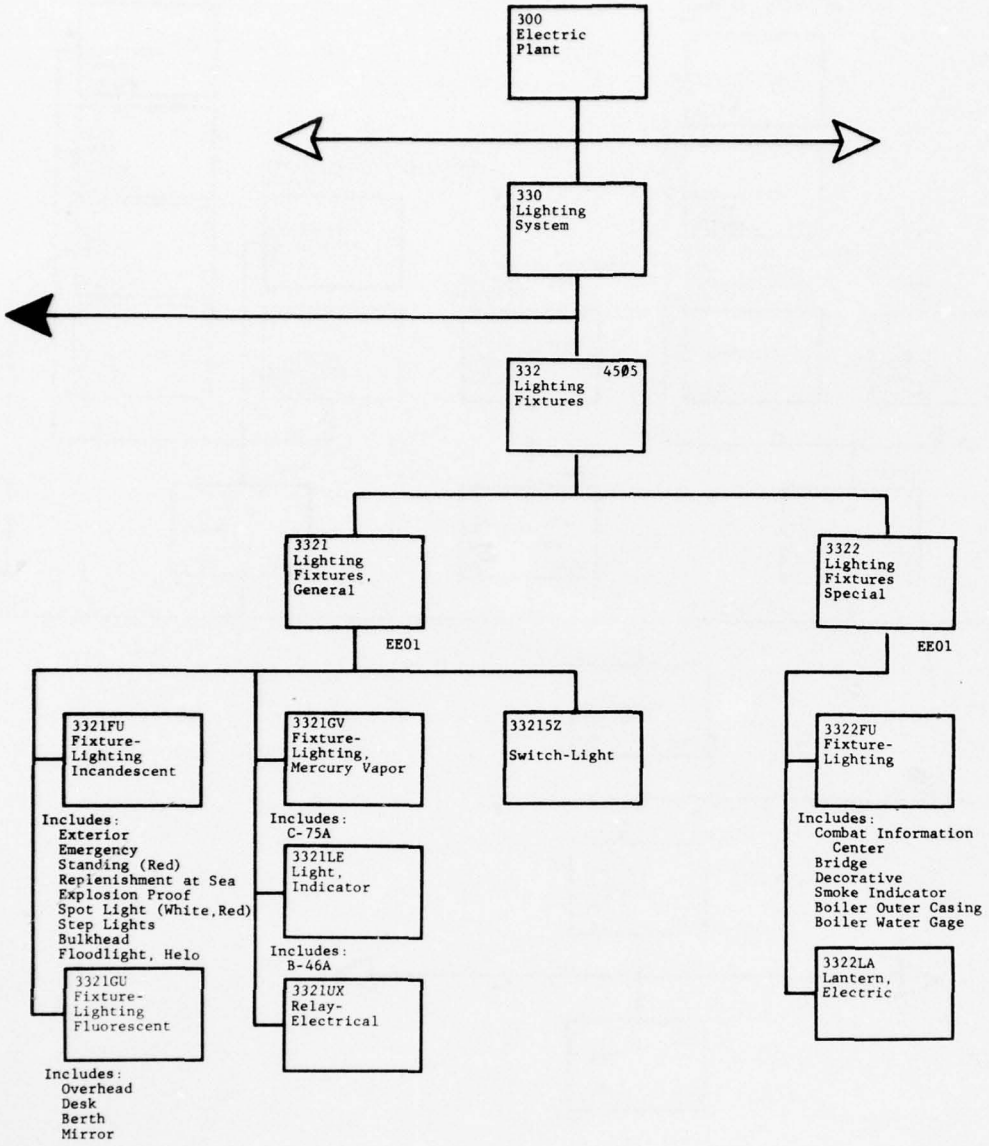
FF-1052 Class
Prepared 9-14-76



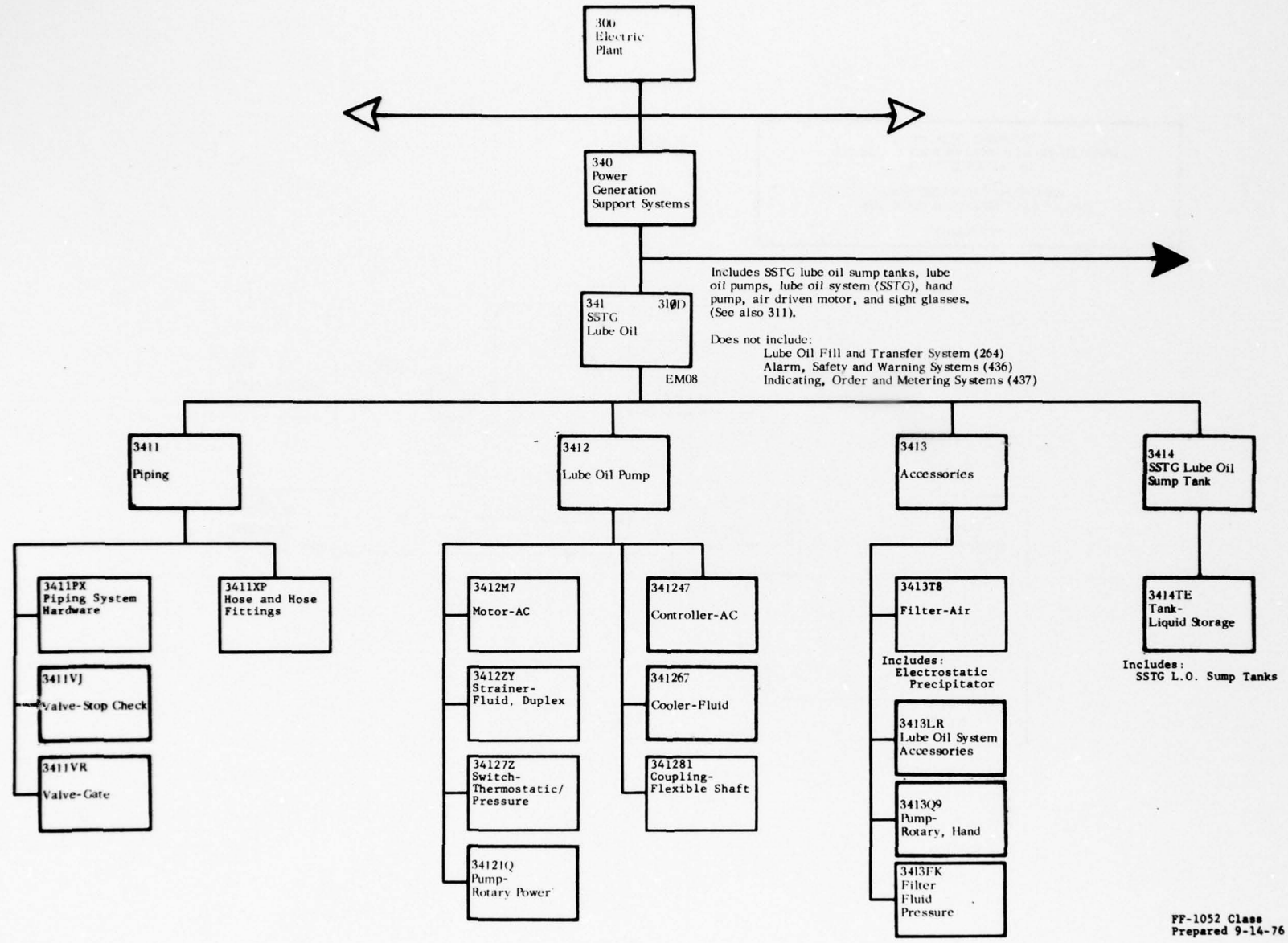
FF-1052 Class
Prepared 9-14-76

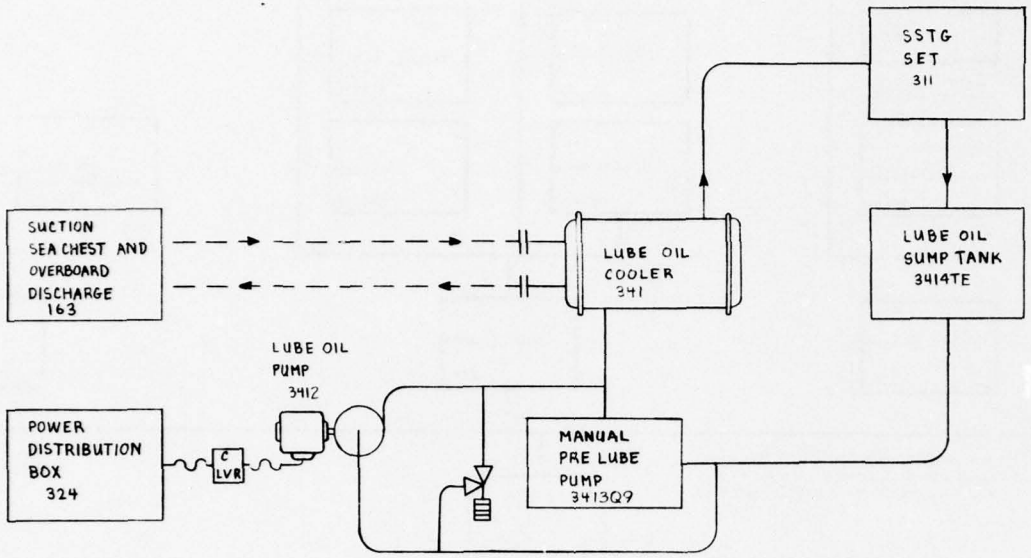


FF-1052 Class
Prepared 9-14-76



FF-1052 Class
Prepared 9-14-76

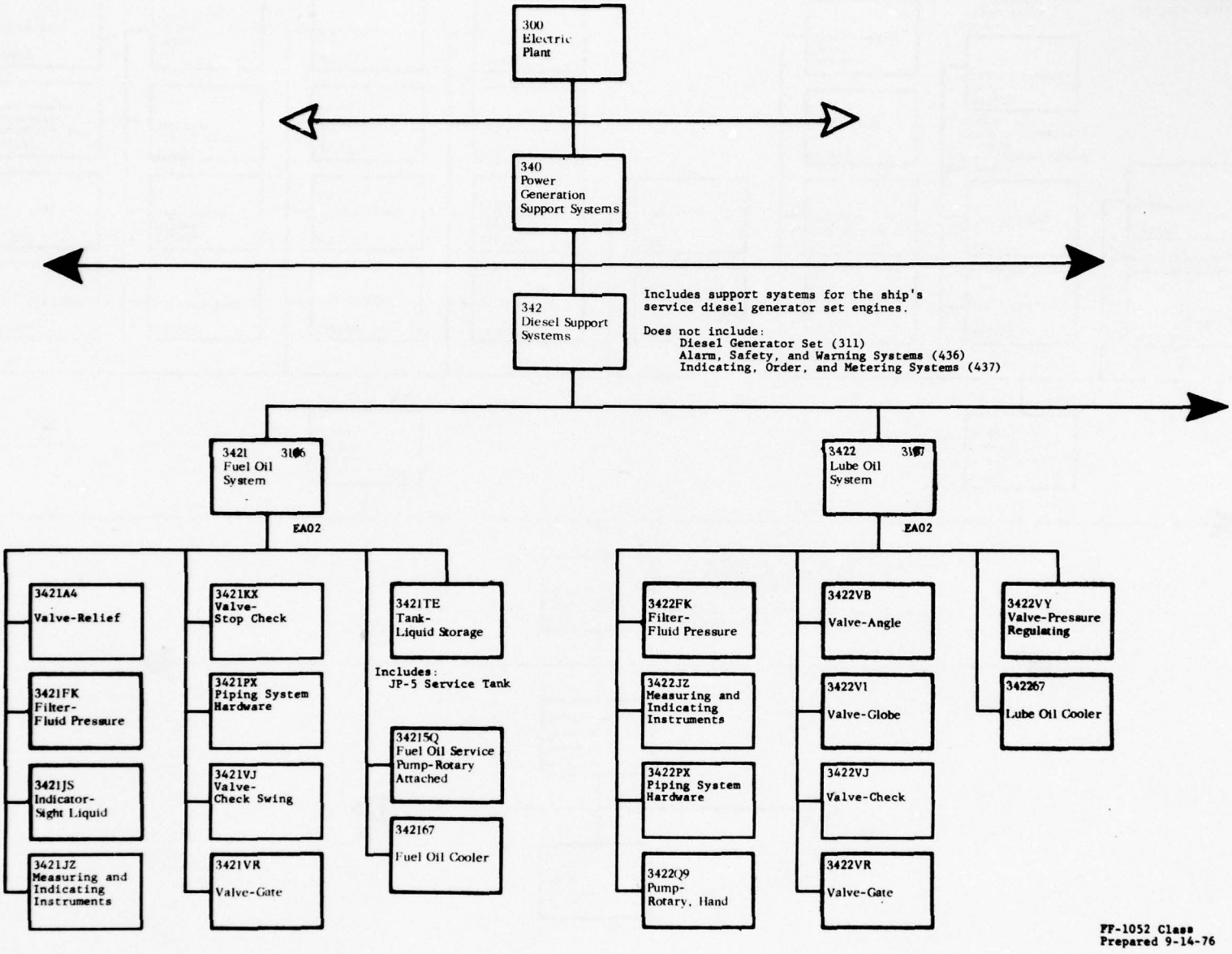

300
Electric
Plant
340
Power
Generation
Support Systems
341 310D
SSTG
Lube Oil
EM08
Includes SSTG lube oil sump tanks, lube oil pumps, lube oil system (SSTG), hand pump, air driven motor, and sight glasses. (See also 311).
Does not include:
Lube Oil Fill and Transfer System (264)
Alarm, Safety and Warning Systems (436)
Indicating, Order and Metering Systems (437)
3411
Piping
3412
Lube Oil Pump
3413
Accessories
3414
SSTG Lube Oil
Sump Tank
3411PX
Piping System
Hardware
3411XP
Hose and Hose
Fittings
3411VJ
Valve-Stop Check
3411VR
Valve-Gate
3412M7
Motor-AC
3412ZY
Strainer-
Fluid, Duplex
34127Z
Switch-
Thermostatic/
Pressure
34121Q
Pump-
Rotary Power
341247
Controller-AC
341267
Cooler-Fluid
341281
Coupling-
Flexible Shaft
3413T8
Filter-Air
Includes:
Electrostatic
Precipitator
3413LR
Lube Oil System
Accessories
3413Q9
Pump-
Rotary, Hand
3413FK
Filter
Fluid
Pressure
3414TE
Tank-
Liquid Storage
Includes:
SSTG L.O. Sump Tanks
FF-1052 Class
Prepared 9-14-76



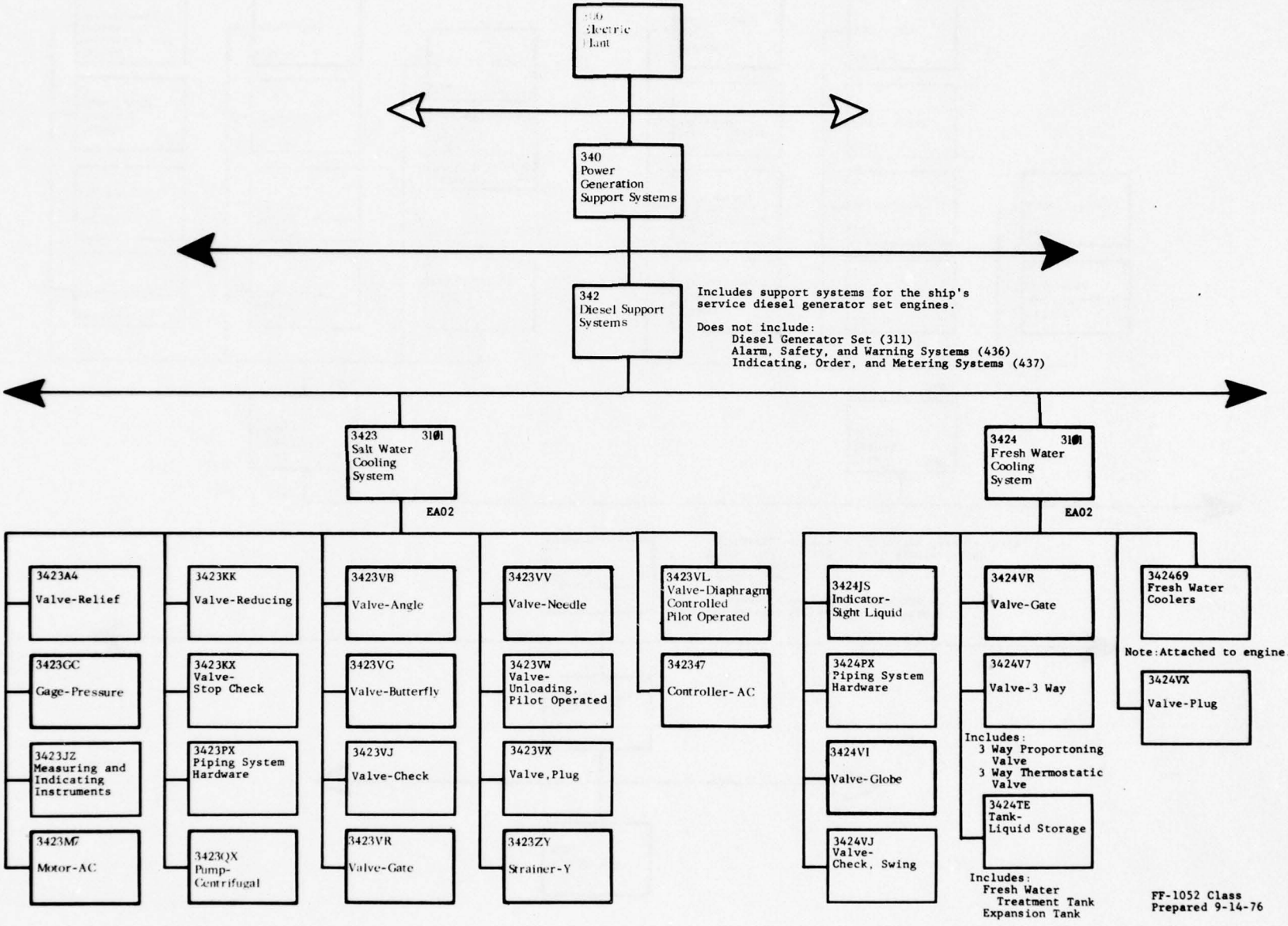
DE-1052 CLASS

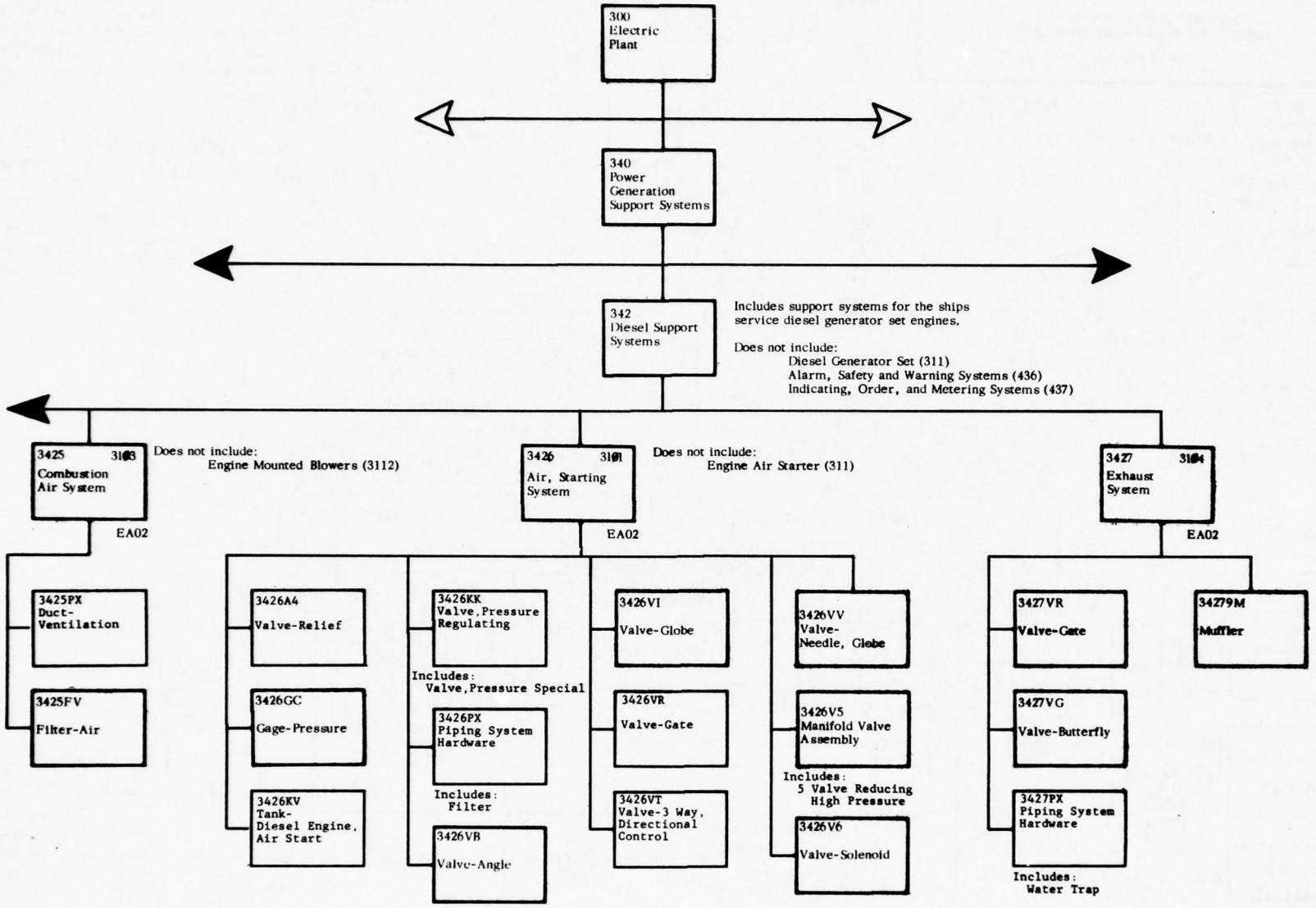
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

300 ELECTRIC PLANT
340 POWER GENERATION SUPPORT SYSTEMS
341 SSTG LUBE OIL

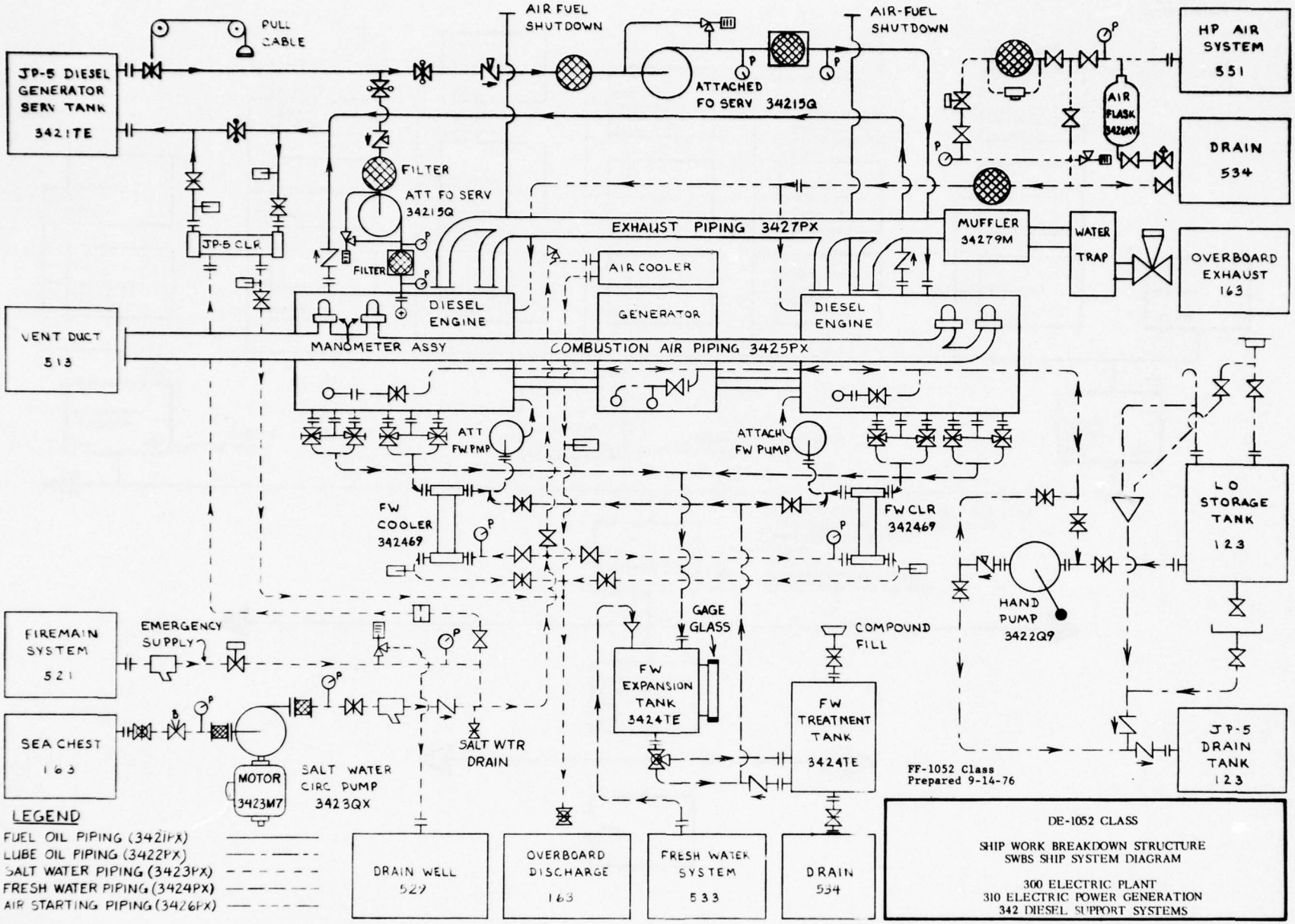


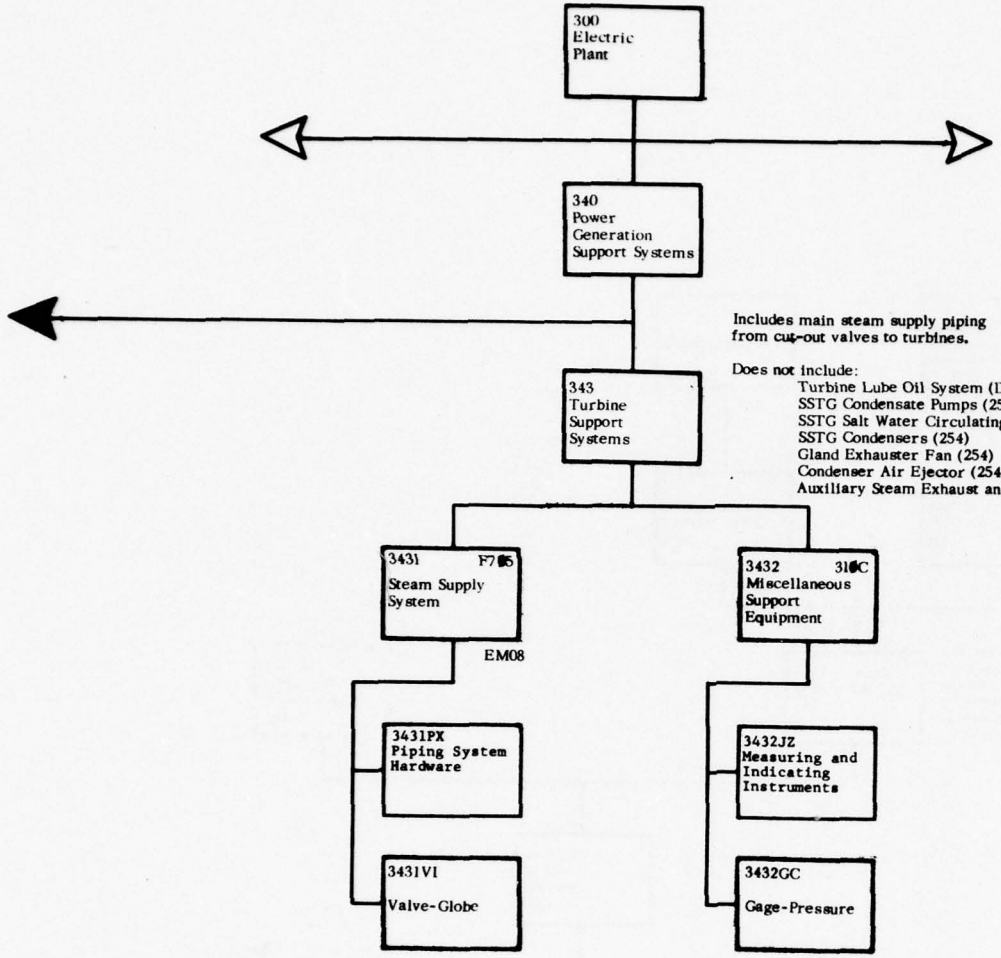
FF-1052 Class
Prepared 9-14-76


Electric Plant
340
Power Generation Support Systems
342
Diesel Support Systems
Includes support systems for the ship's service diesel generator set engines.
Does not include:
Diesel Generator Set (311)
Alarm, Safety, and Warning Systems (436)
Indicating, Order, and Metering Systems (437)
3423 3101
Salt Water Cooling System
EA02
3424 3101
Fresh Water Cooling System
EA02
3423A4
Valve-Relief
3423GC
Gage-Pressure
3423JZ
Measuring and Indicating Instruments
3423M7
Motor-AC
3423KK
Valve-Reducing
3423KX
Valve-Stop Check
3423PX
Piping System Hardware
3423QX
Pump-Centrifugal
3423VB
Valve-Angle
3423VG
Valve-Butterfly
3423VJ
Valve-Check
3423VR
Valve-Gate
3423VV
Valve-Needle
3423VW
Valve-Unloading, Pilot Operated
3423VX
Valve, Plug
3423ZY
Strainer-Y
3423VL
Valve-Diaphragm Controlled Pilot Operated
342347
Controller-AC
3424JS
Indicator-Sight Liquid
3424PX
Piping System Hardware
3424VI
Valve-Globe
3424VJ
Valve-Check, Swing
3424VR
Valve-Gate
3424V7
Valve-3 Way
Includes:
3 Way Proportoning Valve
3 Way Thermostatic Valve
3424TE
Tank-Liquid Storage
Includes:
Fresh Water Treatment Tank
Expansion Tank
342469
Fresh Water Coolers
Note:Attached to engine.
3424VX
Valve-Plug
FF-1052 Class
Prepared 9-14-76



FF-1052 Class
Prepared 9-14-76


JP-5 DIESEL GENERATOR SERV TANK 3421TE
PULL CABLE
AIR FUEL SHUTDOWN
AIR-FUEL SHUTDOWN
ATTACHED FO SERV 34215Q
HP AIR SYSTEM 551
AIR FLASK 3426KV
DRAIN 534
FILTER
ATT FO SERV 34215Q
JP-5 CLR
FILTER
EXHAUST PIPING 3427PX
MUFFLER 34279M
WATER TRAP
OVERBOARD EXHAUST 163
AIR COOLER
GENERATOR
DIESEL ENGINE
DIESEL ENGINE
VENT DUCT 513
MANOMETER ASSY
COMBUSTION AIR PIPING 3425PX
ATT FW PMP
ATTACH FW PUMP
FW COOLER 342469
FW CLR 342469
LO STORAGE TANK 123
HAND PUMP 3422Q9
FIREMAIN SYSTEM 521
EMERGENCY SUPPLY
GAGE GLASS
COMPOUND FILL
FW EXPANSION TANK 3424TE
FW TREATMENT TANK 3424TE
SEA CHEST 163
MOTOR 3423M7
SALT WATER CIRC PUMP 3423QX
SALT WTR DRAIN
JP-5 DRAIN TANK 123
FF-1052 Class
Prepared 9-14-76
LEGEND
FUEL OIL PIPING (3421PX)
LUBE OIL PIPING (3422PX)
SALT WATER PIPING (3423PX)
FRESH WATER PIPING (3424PX)
AIR STARTING PIPING (3426PX)
DRAIN WELL 529
OVERBOARD DISCHARGE 163
FRESH WATER SYSTEM 533
DRAIN 534
DE-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
300 ELECTRIC PLANT
310 ELECTRIC POWER GENERATION
342 DIESEL SUPPORT SYSTEMS

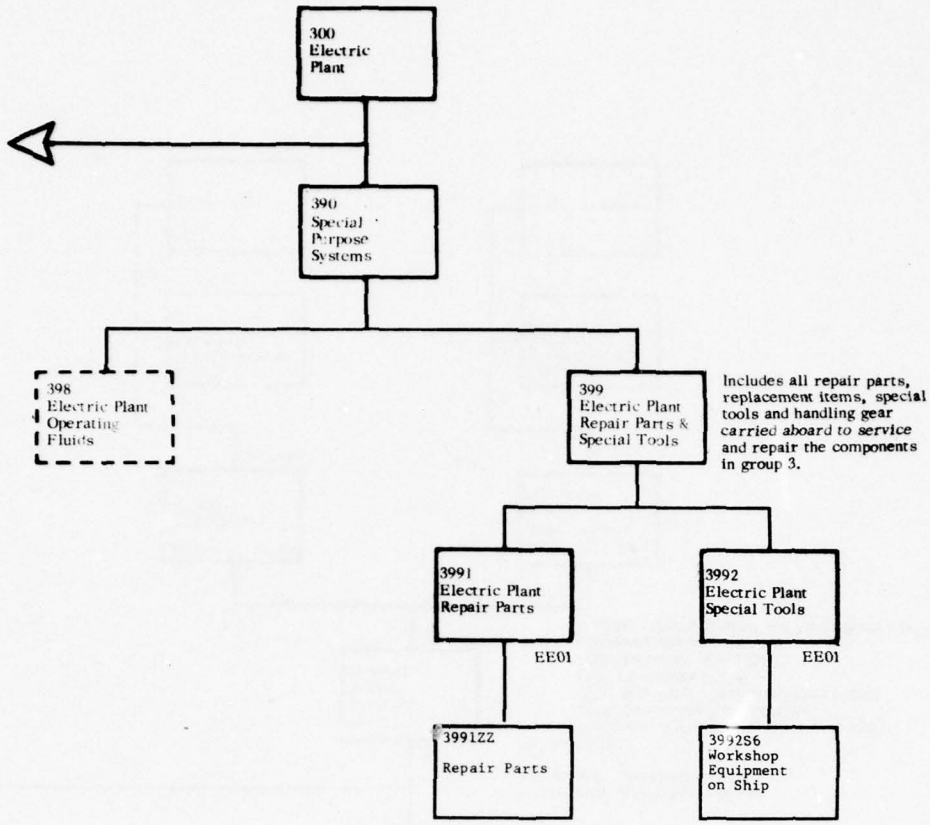


Includes main steam supply piping from cut-out valves to turbines.

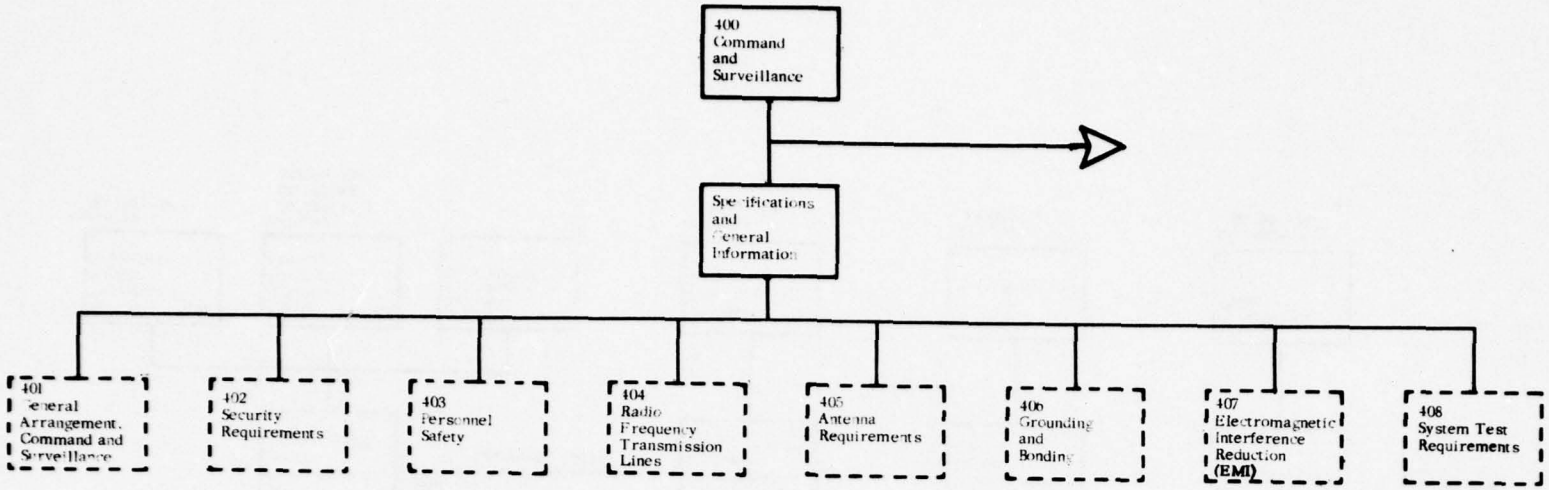
Does not include:

- Turbine Lube Oil System (Detached) (341)
- SSTG Condensate Pumps (255)
- SSTG Salt Water Circulating Pumps (256)
- SSTG Condensers (254)
- Gland Exhauster Fan (254)
- Condenser Air Ejector (254)
- Auxiliary Steam Exhaust and Drain System (534)

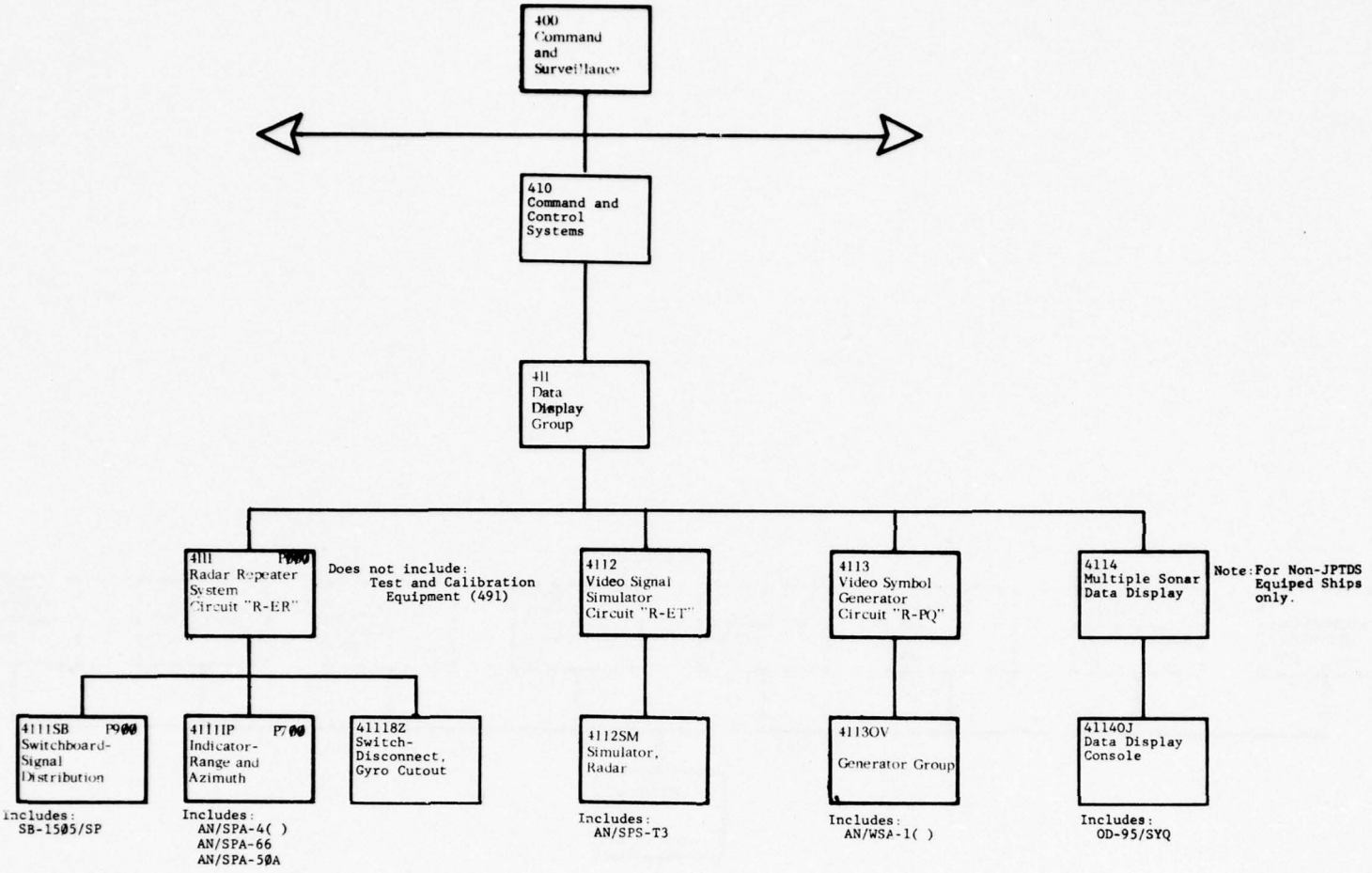
FF-1052 Class
Prepared 9-14-76



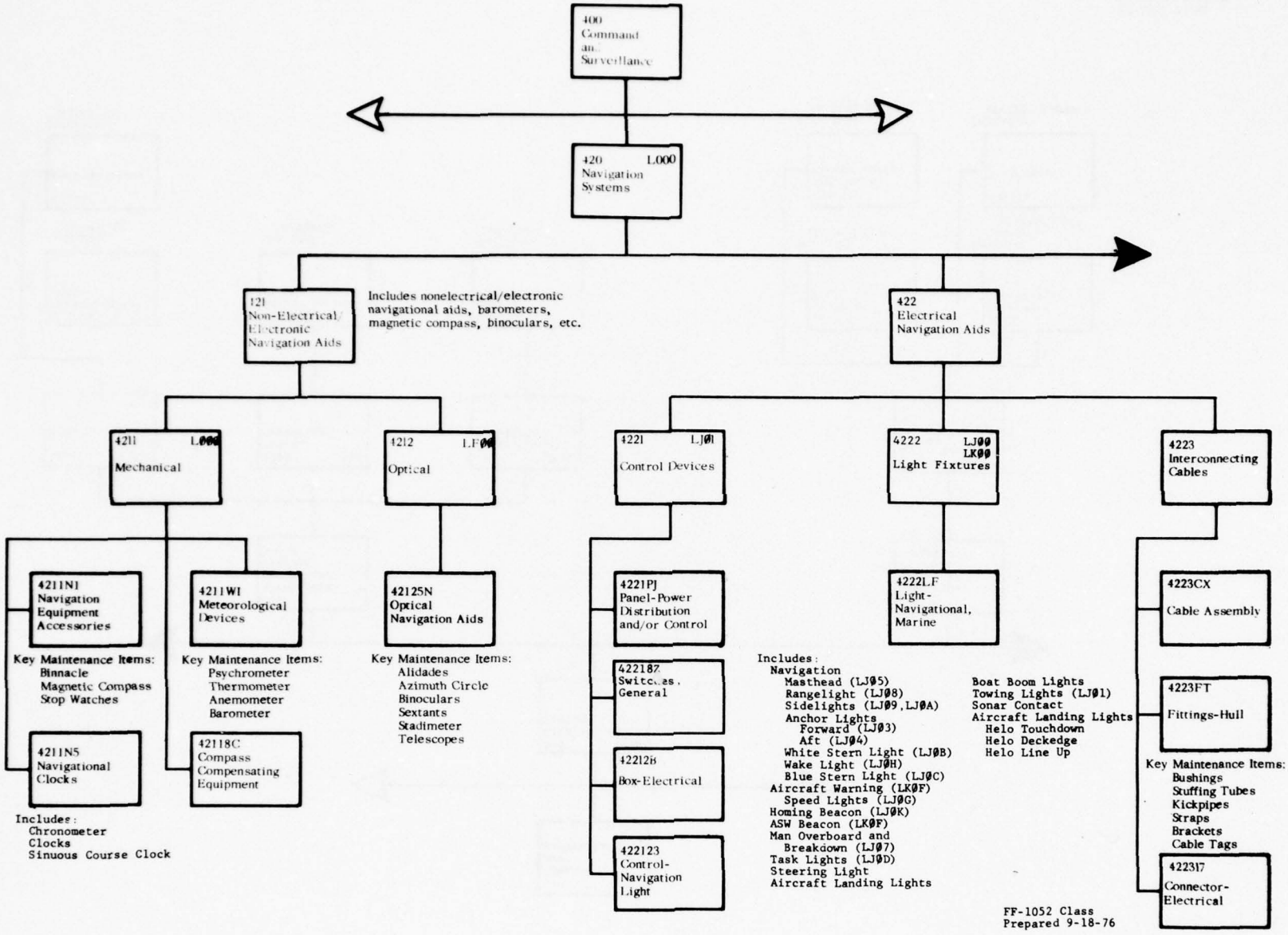
FF-1052 Class
Prepared 9-14-76

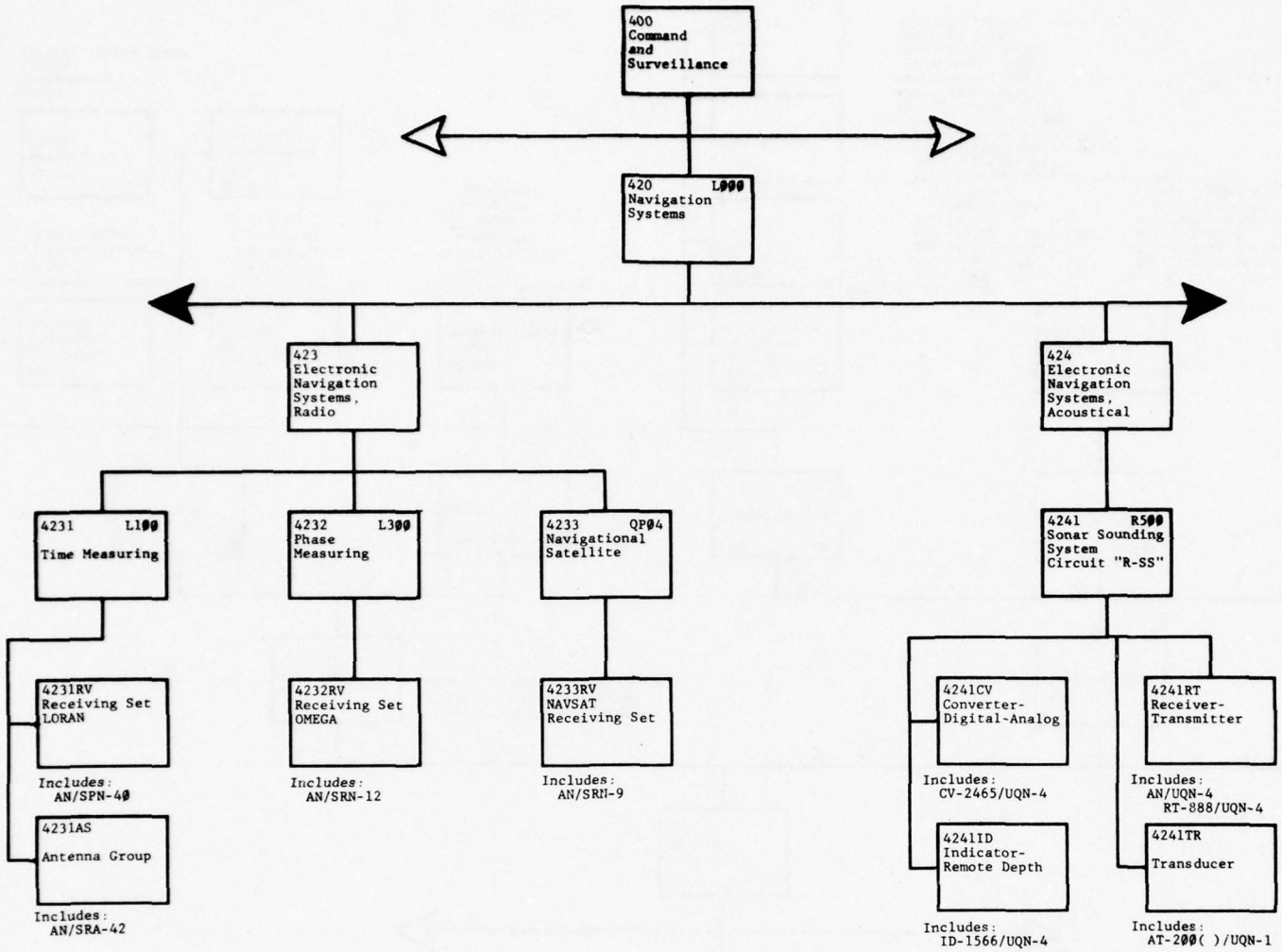


FF-1052 Class
Prepared 9-18-76

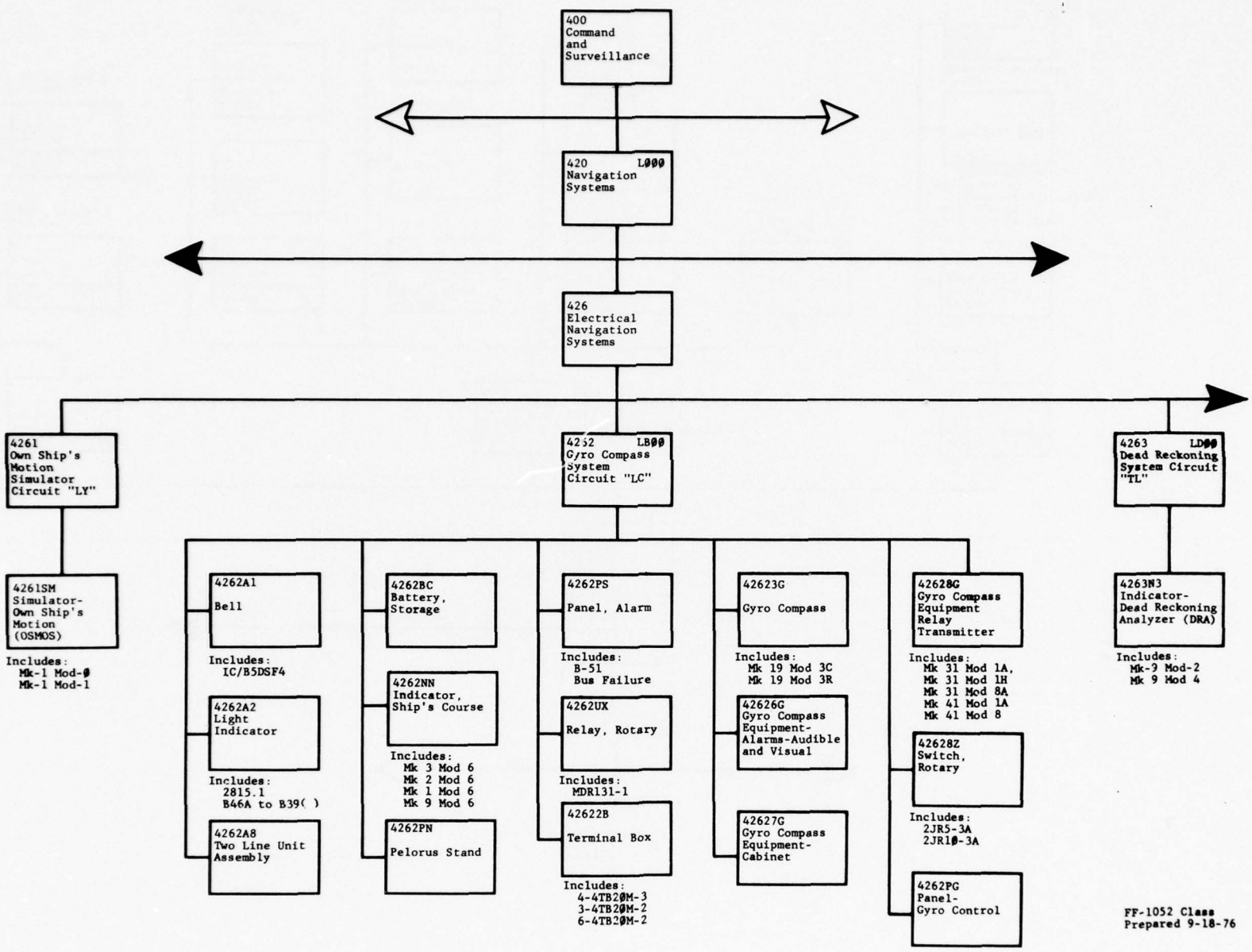


FF-1052 Class
Prepared 9-18-76

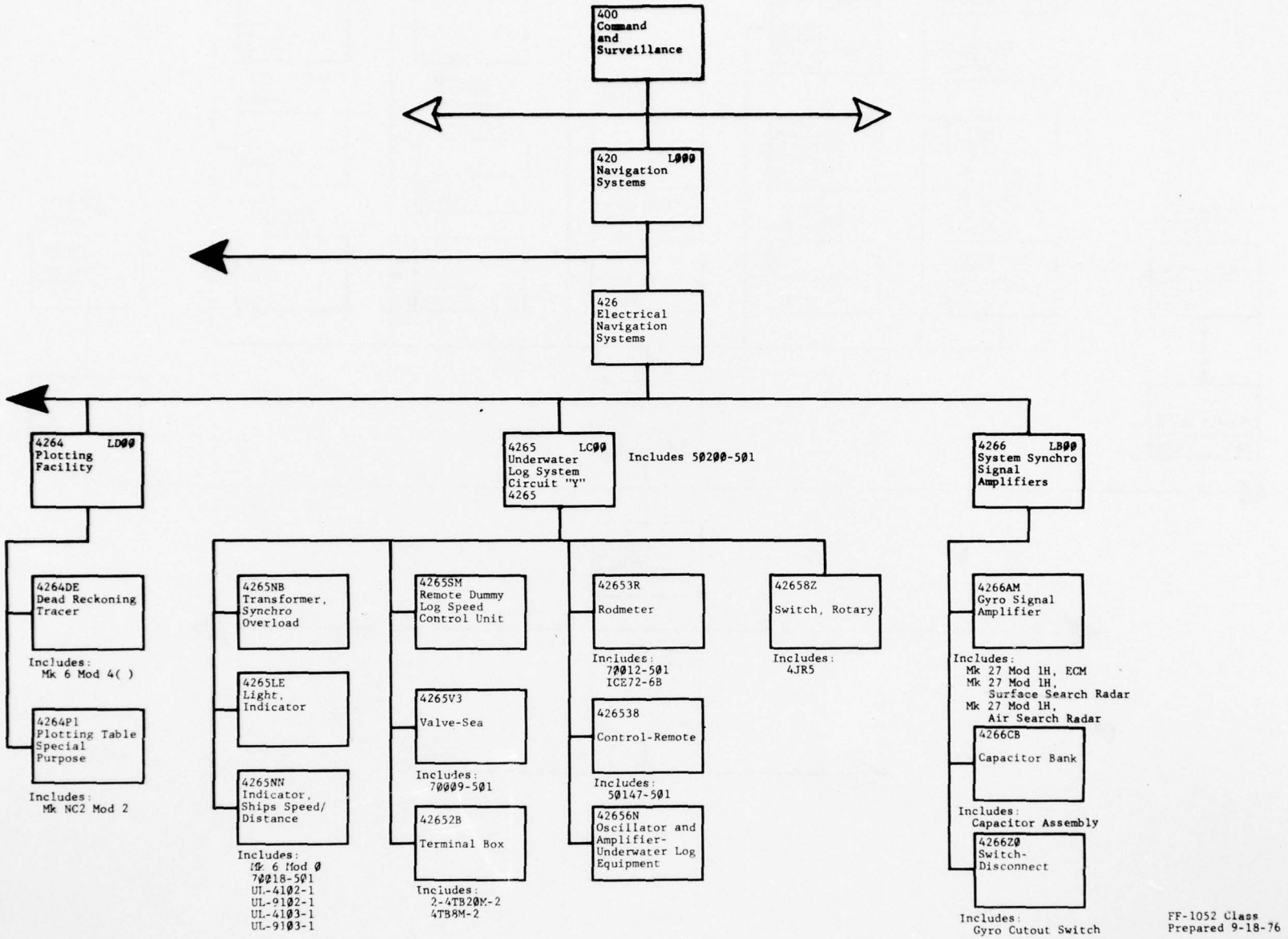

400
Command and Surveillance
420 L000
Navigation Systems
421
Non-Electrical/ Electronic Navigation Aids
Includes nonelectrical/electronic navigational aids, barometers, magnetic compass, binoculars, etc.
422
Electrical Navigation Aids
4211 L000
Mechanical
4212 LF00
Optical
4221 LJ01
Control Devices
4222 LJ00 LK00
Light Fixtures
4223
Interconnecting Cables
4211N1
Navigation Equipment Accessories
Key Maintenance Items:
Binnacle
Magnetic Compass
Stop Watches
4211N5
Navigational Clocks
Includes:
Chronometer
Clocks
Sinuous Course Clock
4211WI
Meteorological Devices
Key Maintenance Items:
Psychrometer
Thermometer
Anemometer
Barometer
42118C
Compass Compensating Equipment
42125N
Optical Navigation Aids
Key Maintenance Items:
Alidades
Azimuth Circle
Binoculars
Sextants
Stadimeter
Telescopes
4221PJ
Panel-Power Distribution and/or Control
422187
Switches, General
422126
Box-Electrical
422123
Control-Navigation Light
4222LF
Light-Navigational, Marine
Includes:
Navigation
Masthead (LJ05)
Rangelight (LJ08)
Sidelights (LJ09, LJ0A)
Anchor Lights
Forward (LJ03)
Aft (LJ04)
White Stern Light (LJ0B)
Wake Light (LJ0H)
Blue Stern Light (LJ0C)
Aircraft Warning (LK0F)
Speed Lights (LJ0G)
Homing Beacon (LJ0K)
ASW Beacon (LK0F)
Man Overboard and Breakdown (LJ07)
Task Lights (LJ0D)
Steering Light
Aircraft Landing Lights
Boat Boom Lights
Towing Lights (LJ01)
Sonar Contact
Aircraft Landing Lights
Helo Touchdown
Helo Deckedge
Helo Line Up
4223CX
Cable Assembly
4223FT
Fittings-Hull
Key Maintenance Items:
Bushings
Stuffing Tubes
Kickpipes
Straps
Brackets
Cable Tags
422317
Connector-Electrical
FF-1052 Class
Prepared 9-18-76



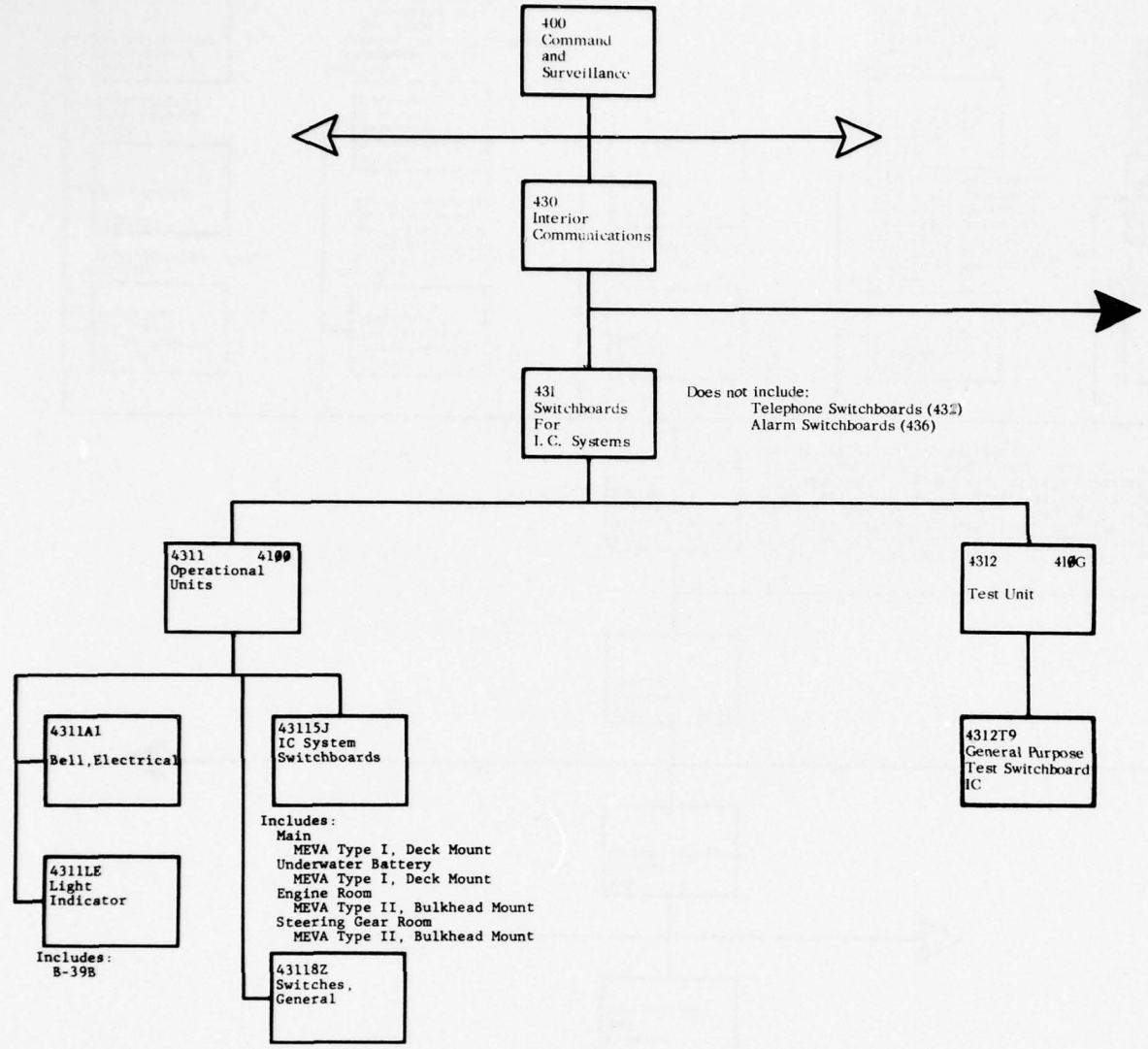
FF-1052 Class
Prepared 9-18-76



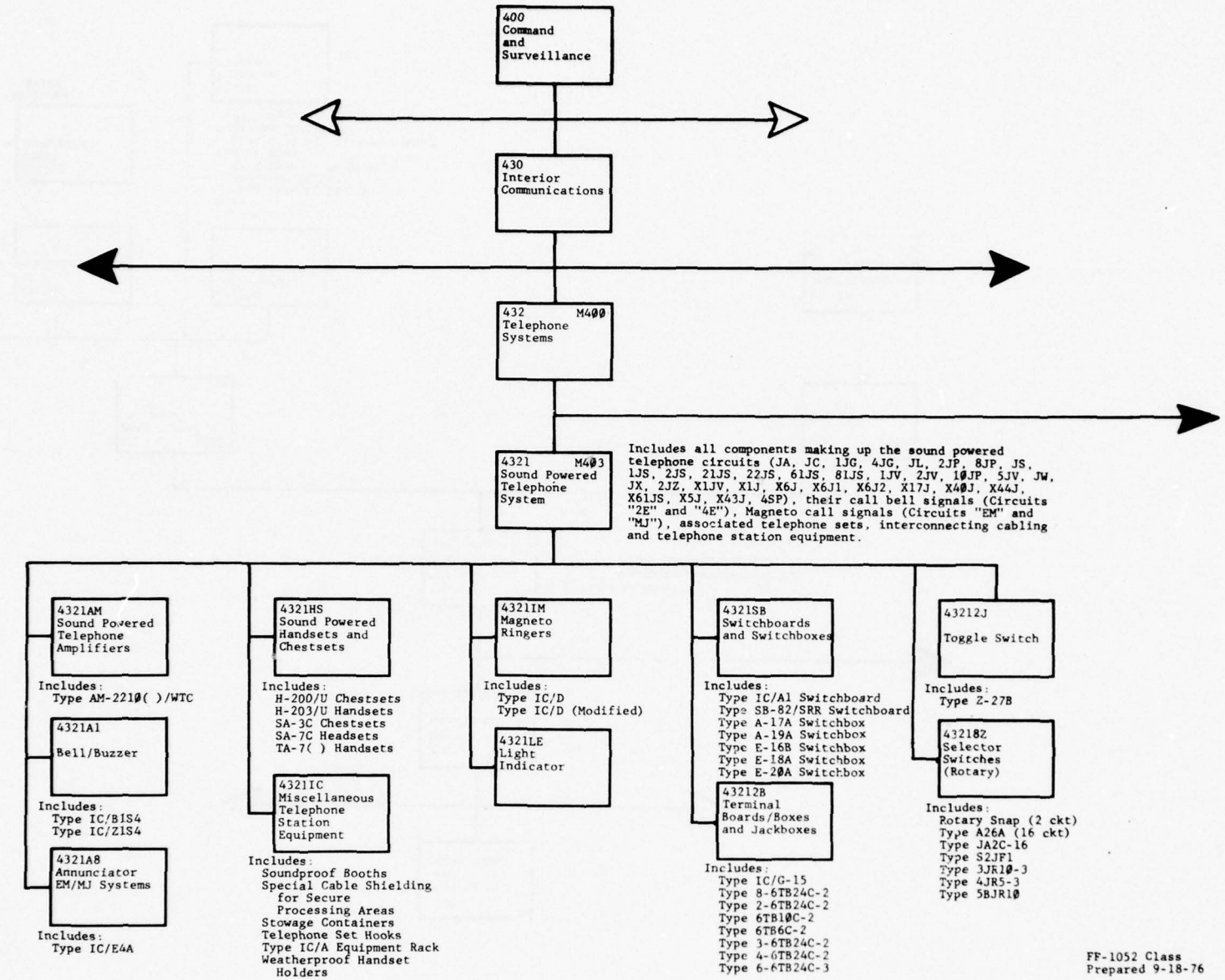
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Prepared 9-18-76

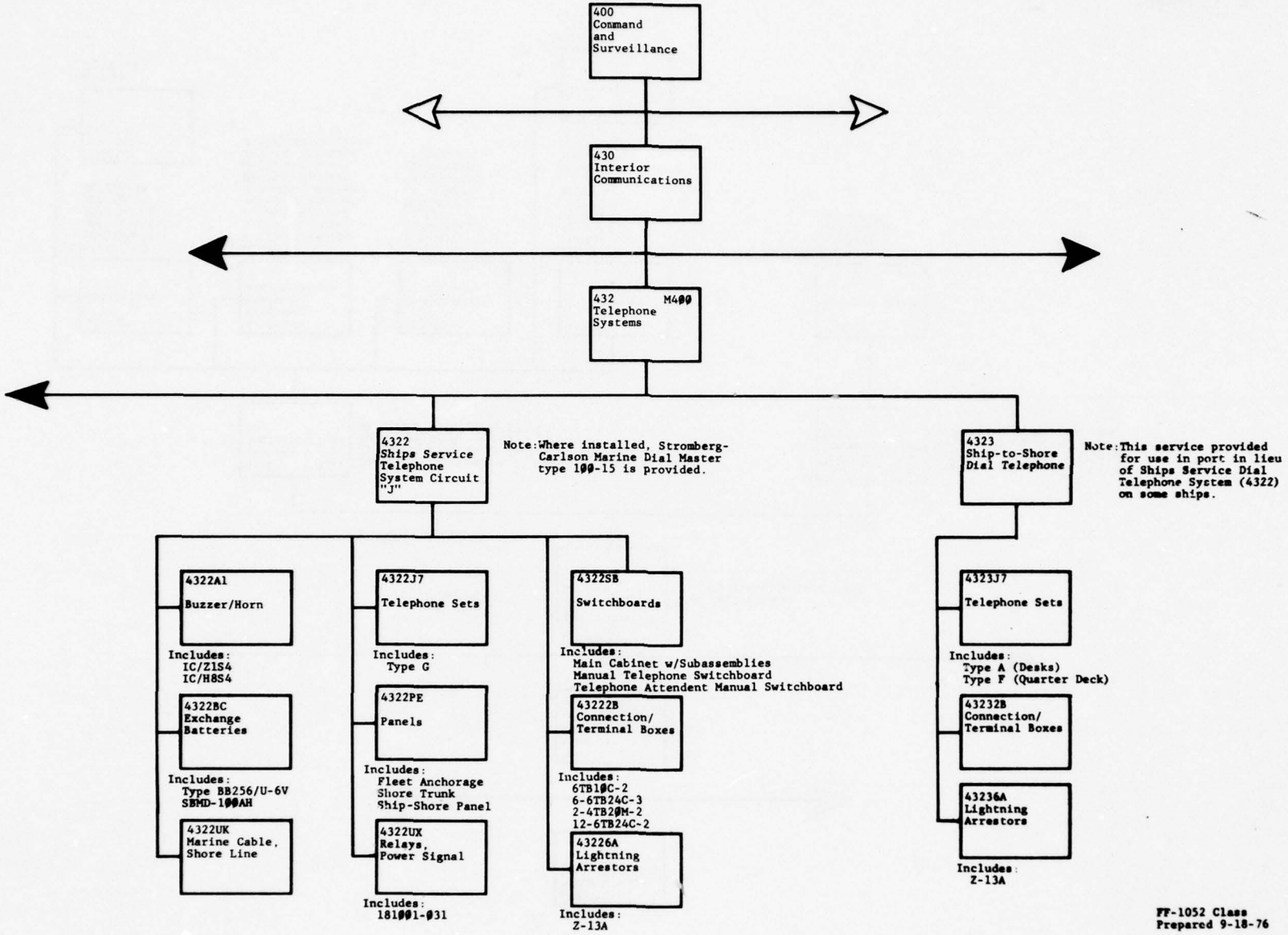


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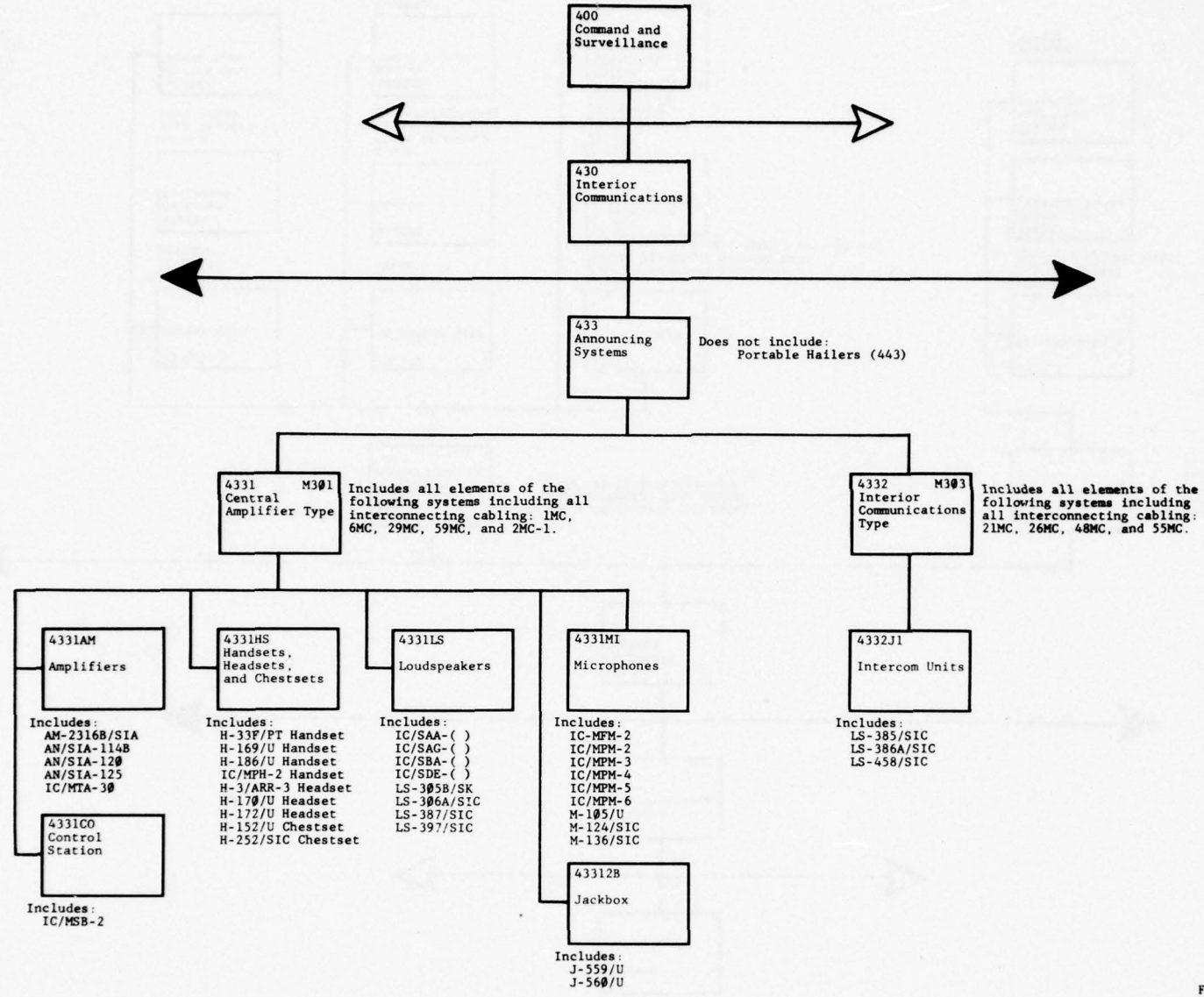


FF-1052 Class
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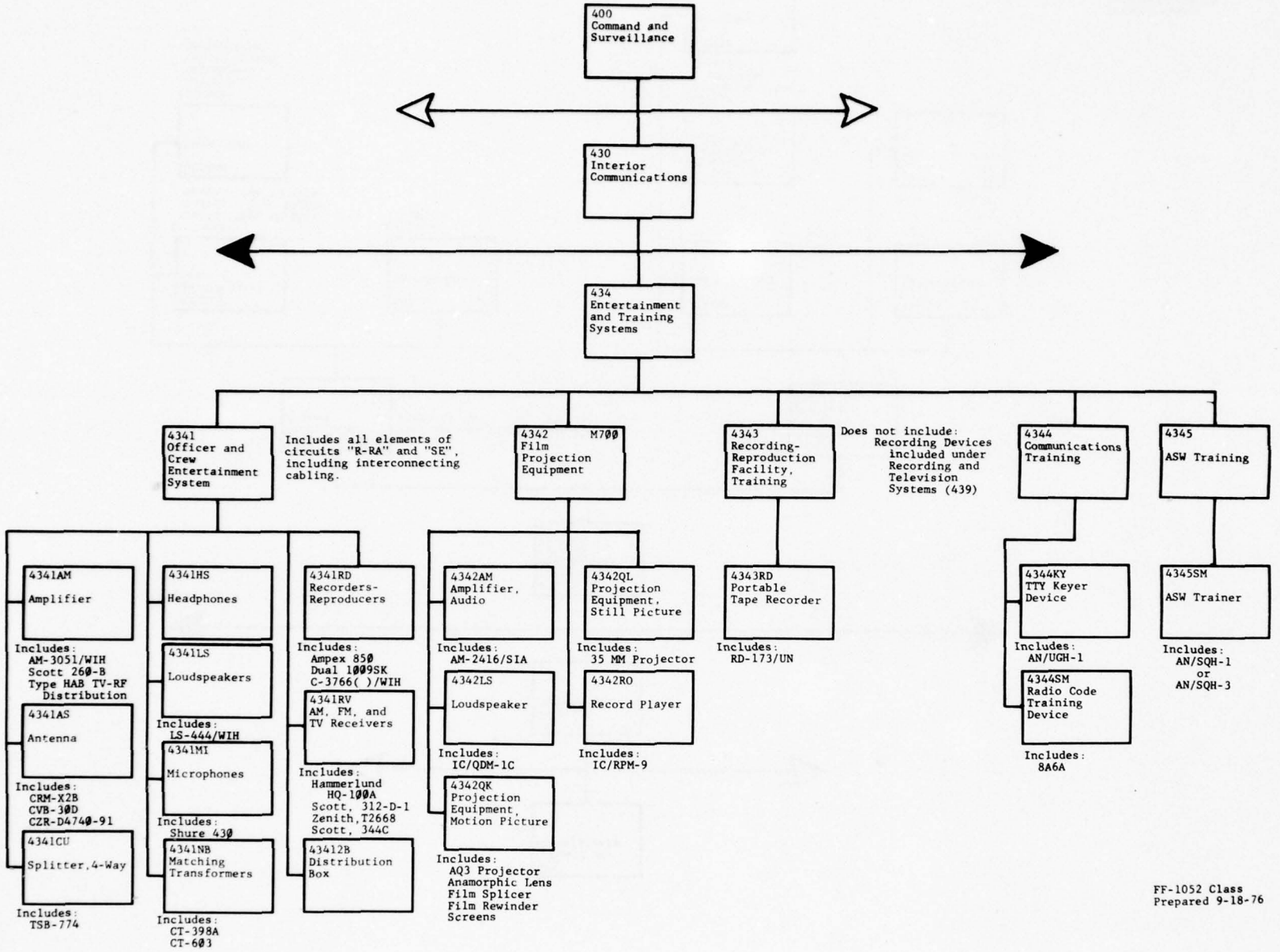

400
Command and Surveillance
430
Interior Communications
432 M400
Telephone Systems
4321 M403
Sound Powered Telephone System
Includes all components making up the sound powered telephone circuits (JA, JC, 1JG, 4JG, JL, 2JP, 8JP, JS, 1JS, 2JS, 21JS, 22JS, 61JS, 81JS, 1JV, 2JV, 10JP, 5JV, JW, JX, 2JZ, X1JV, X1J, X6J, X6J1, X6J2, X17J, X40J, X44J, X61JS, X5J, X43J, 4SP), their call bell signals (Circuits "2E" and "4E"), Magneto call signals (Circuits "EM" and "MJ"), associated telephone sets, interconnecting cabling and telephone station equipment.
4321AM
Sound Powered Telephone Amplifiers
Includes:
Type AM-2210( )/WTC
4321A1
Bell/Buzzer
Includes:
Type IC/B1S4
Type IC/Z1S4
4321A8
Annunciator EM/MJ Systems
Includes:
Type IC/E4A
4321HS
Sound Powered Handsets and Chestsets
Includes:
H-200/U Chestsets
H-203/U Handsets
SA-3C Chestsets
SA-7C Headsets
TA-7( ) Handsets
4321IC
Miscellaneous Telephone Station Equipment
Includes:
Soundproof Booths
Special Cable Shielding for Secure Processing Areas
Stowage Containers
Telephone Set Hooks
Type IC/A Equipment Rack
Weatherproof Handset Holders
4321IM
Magneto Ringers
Includes:
Type IC/D
Type IC/D (Modified)
4321LE
Light Indicator
4321SB
Switchboards and Switchboxes
Includes:
Type IC/A1 Switchboard
Type SB-82/SRR Switchboard
Type A-17A Switchbox
Type A-19A Switchbox
Type E-16B Switchbox
Type E-18A Switchbox
Type E-20A Switchbox
43212B
Terminal Boards/Boxes and Jackboxes
Includes:
Type IC/G-15
Type 8-6TB24C-2
Type 2-6TB24C-2
Type 6TB10C-2
Type 6TB6C-2
Type 3-6TB24C-2
Type 4-6TB24C-2
Type 6-6TB24C-3
43212J
Toggle Switch
Includes:
Type Z-27B
43218Z
Selector Switches (Rotary)
Includes:
Rotary Snap (2 ckt)
Type A26A (16 ckt)
Type JA2C-16
Type S2JF1
Type 3JR10-3
Type 4JR5-3
Type 5BJR10
FF-1052 Class
Prepared 9-18-76

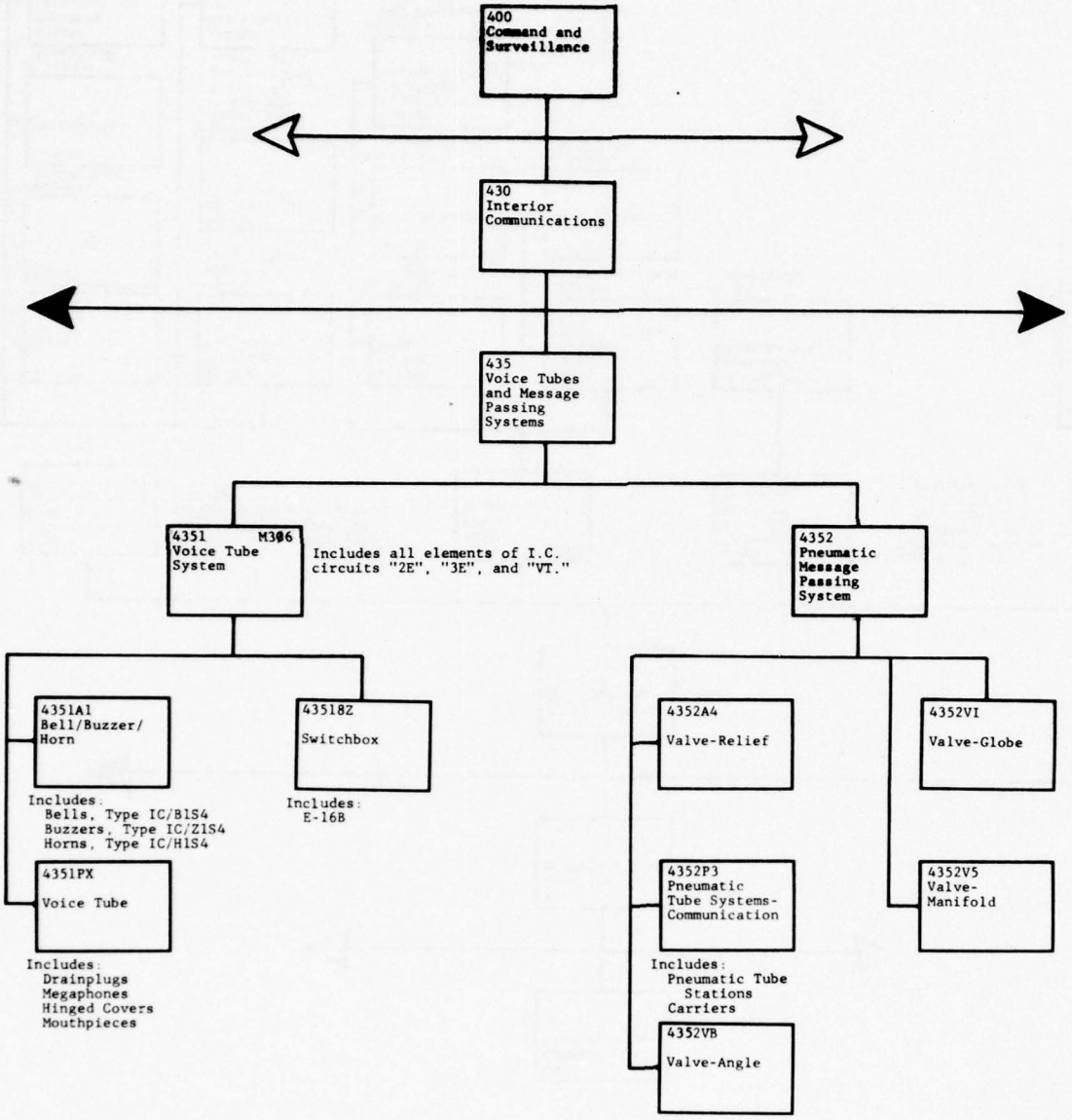


FF-1052 Class
Prepared 9-18-76

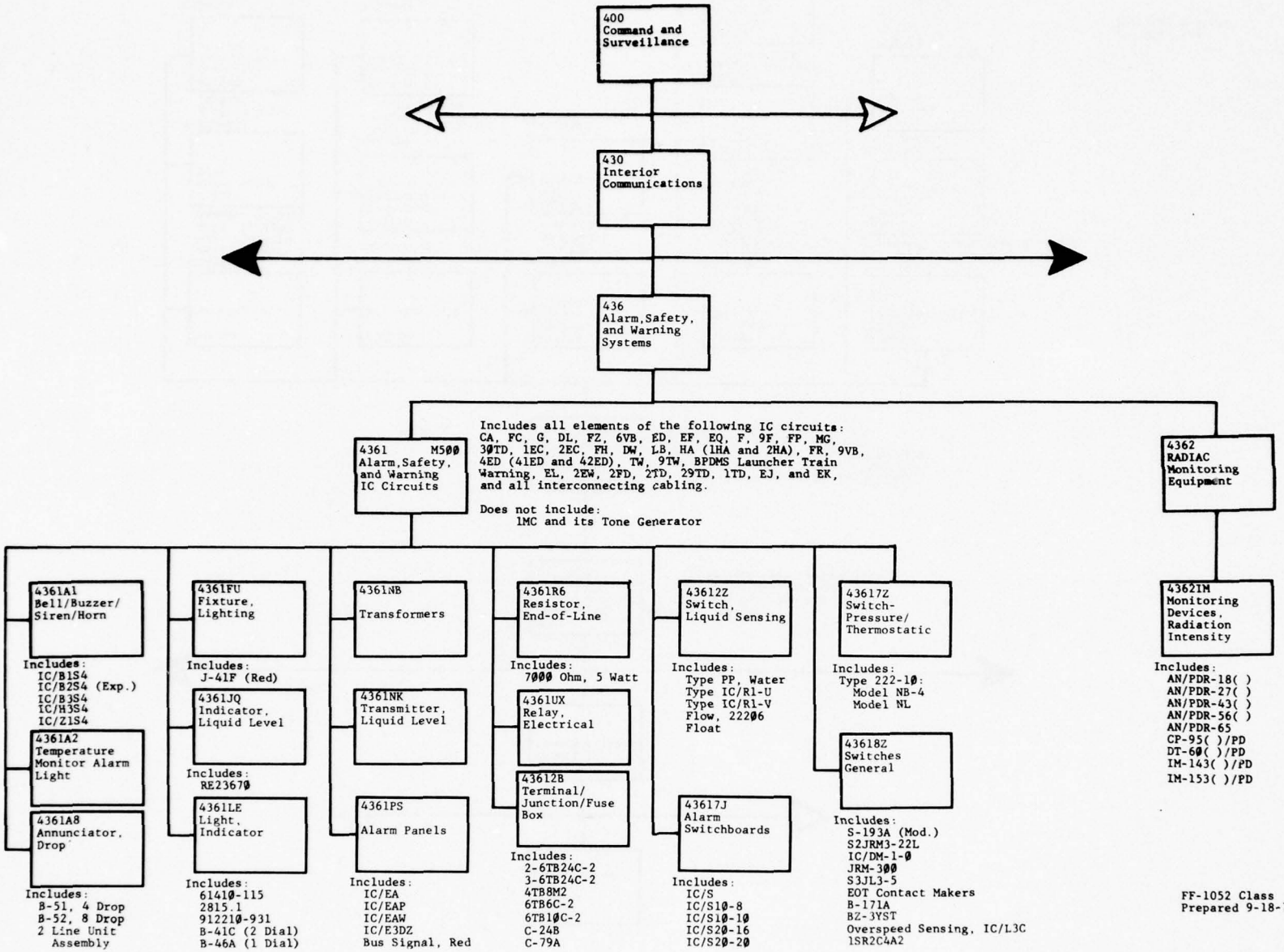


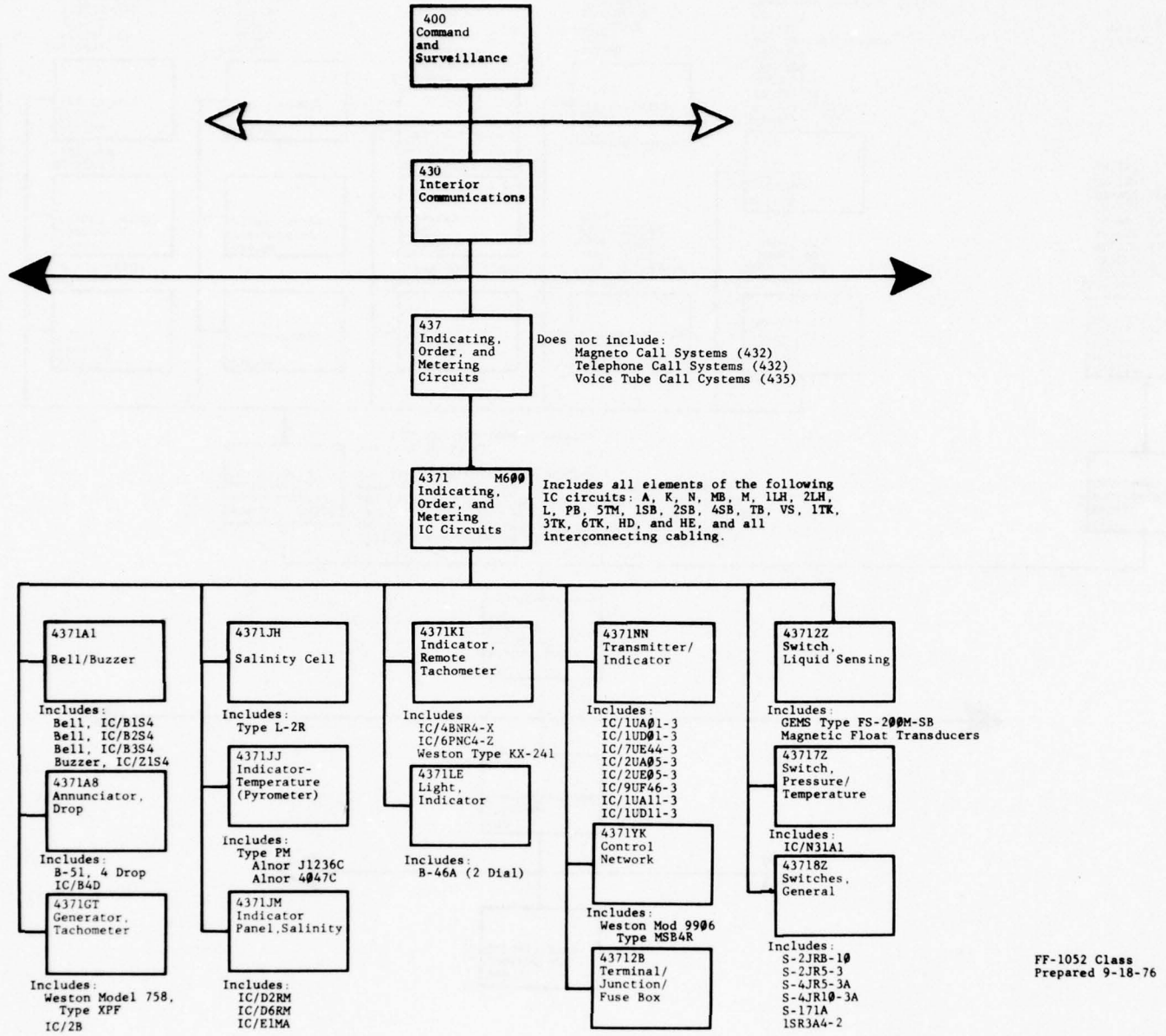
FF-1052 Class
Prepared 9-18-76


400
Command and Surveillance
430
Interior Communications
434
Entertainment and Training Systems
4341
Officer and Crew Entertainment System
Includes all elements of circuits "R-RA" and "SE", including interconnecting cabling.
4342 M700
Film Projection Equipment
4343
Recording-Reproduction Facility, Training
Does not include: Recording Devices included under Recording and Television Systems (439)
4344
Communications Training
4345
ASW Training
4341AM
Amplifier
Includes: AM-3051/WIH Scott 260-B Type HAB TV-RF Distribution
4341AS
Antenna
Includes: CRM-X2B CVB-30D CZR-D4740-91
4341CU
Splitter, 4-Way
Includes: TSB-774
4341HS
Headphones
4341LS
Loudspeakers
Includes: LS-444/WIH
4341MI
Microphones
Includes: Shure 430
4341NB
Matching Transformers
Includes: CT-398A CT-603
4341RD
Recorders-Reproducers
Includes: Ampex 850 Dual 1009SK C-3766( )/WIH
4341RV
AM, FM, and TV Receivers
Includes: Hammerlund HQ-100A Scott, 312-D-1 Zenith, T2668 Scott, 344C
43412B
Distribution Box
4342AM
Amplifier, Audio
Includes: AM-2416/SIA
4342LS
Loudspeaker
Includes: IC/QDM-1C
4342QK
Projection Equipment, Motion Picture
Includes: AQ3 Projector Anamorphic Lens Film Splicer Film Rewinder Screens
4342QL
Projection Equipment, Still Picture
Includes: 35 MM Projector
4342RO
Record Player
Includes: IC/RPM-9
4343RD
Portable Tape Recorder
Includes: RD-173/UN
4344KY
TTY Keyer Device
Includes: AN/UGH-1
4344SM
Radio Code Training Device
Includes: 8A6A
4345SM
ASW Trainer
Includes: AN/SQH-1 or AN/SQH-3
FF-1052 Class
Prepared 9-18-76

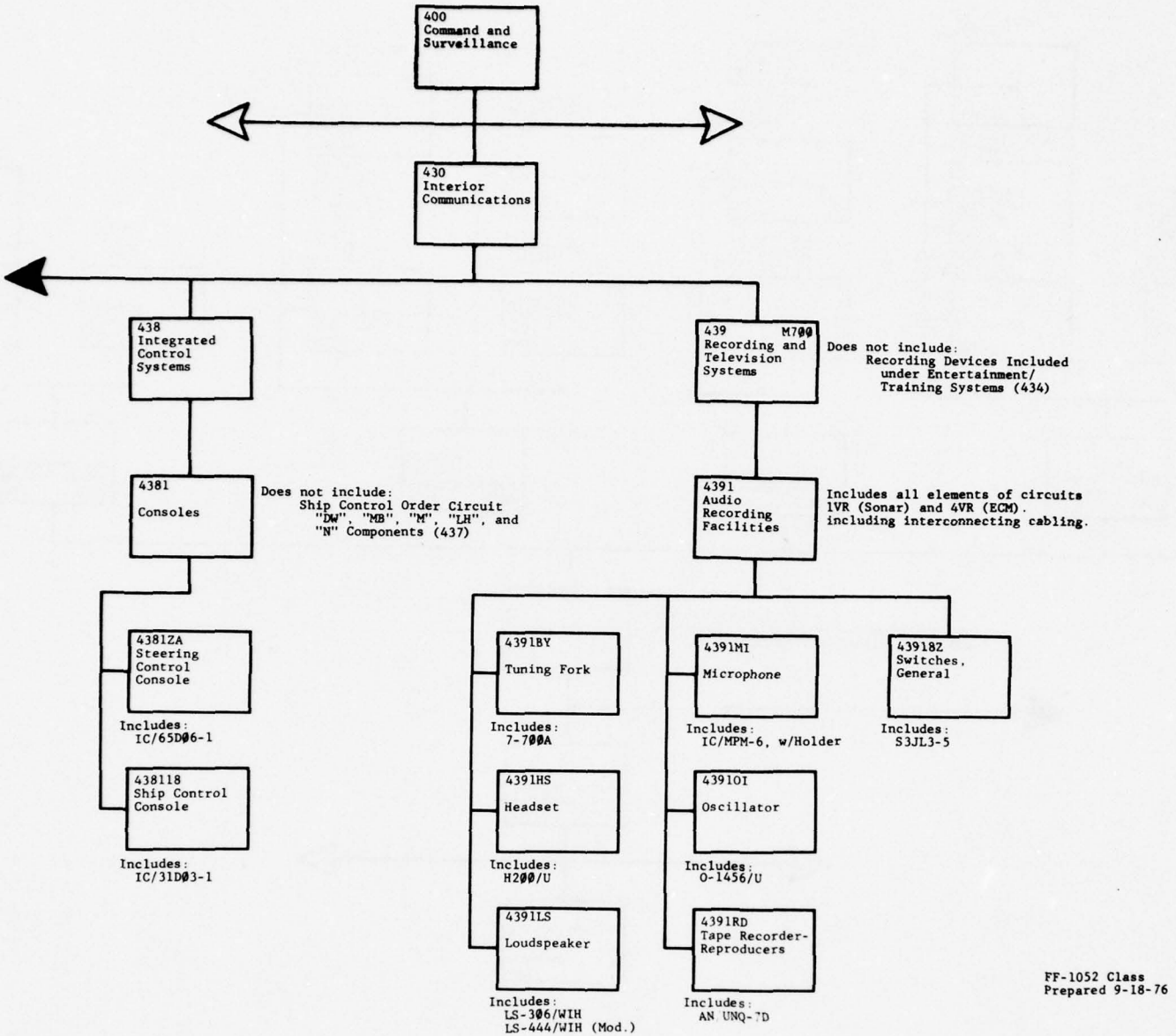


FF-1052 Class
Prepared 9-18-76

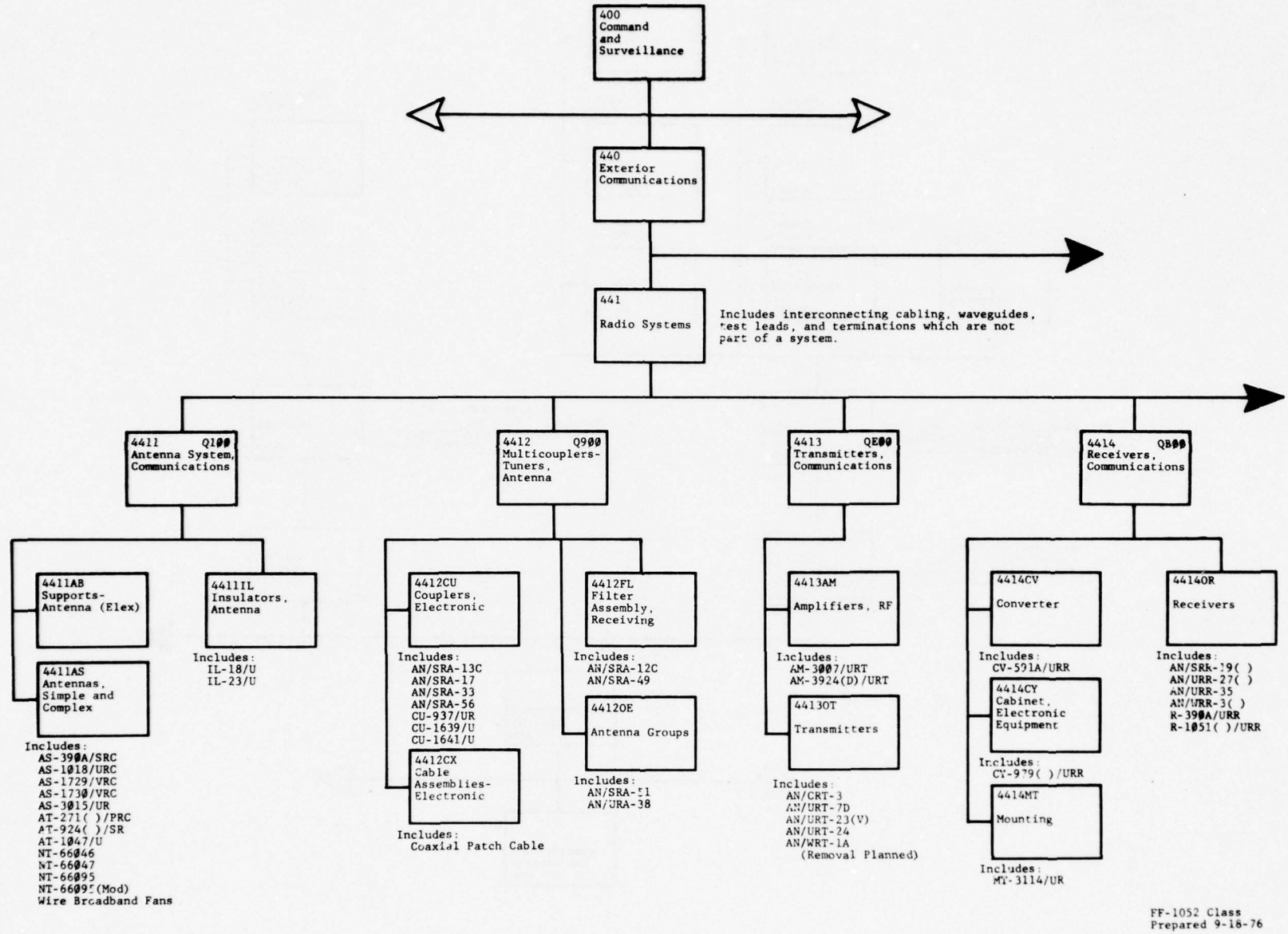

400
Command and Surveillance
430
Interior Communications
436
Alarm, Safety, and Warning Systems
4361 M500
Alarm, Safety, and Warning IC Circuits
Includes all elements of the following IC circuits:
CA, FC, G, DL, FZ, 6VB, ED, EF, EQ, F, 9F, FP, MG, 30TD, 1EC, 2EC, FH, DW, LB, HA (1HA and 2HA), FR, 9VB, 4ED (41ED and 42ED), TW, 9TW, BPDMS Launcher Train Warning, EL, 2EW, 2FD, 2TD, 29TD, 1TD, EJ, and EK, and all interconnecting cabling.
Does not include:
1MC and its Tone Generator
4362
RADIAC Monitoring Equipment
4361A1
Bell/Buzzer/ Siren/Horn
Includes:
IC/B1S4
IC/B2S4 (Exp.)
IC/B3S4
IC/H3S4
IC/Z1S4
4361A2
Temperature Monitor Alarm Light
4361A8
Annunciator, Drop
Includes:
B-51, 4 Drop
B-52, 8 Drop
2 Line Unit Assembly
4361FU
Fixture, Lighting
Includes:
J-41F (Red)
4361JQ
Indicator, Liquid Level
Includes:
RE23670
4361LE
Light, Indicator
Includes:
61410-115
2815.1
912210-931
B-41C (2 Dial)
B-46A (1 Dial)
4361NB
Transformers
4361NK
Transmitter, Liquid Level
4361PS
Alarm Panels
Includes:
IC/EA
IC/EAP
IC/EAW
IC/E3DZ
Bus Signal, Red
4361R6
Resistor, End-of-Line
Includes:
7000 Ohm, 5 Watt
4361UX
Relay, Electrical
43612B
Terminal/ Junction/Fuse Box
Includes:
2-6TB24C-2
3-6TB24C-2
4TB8M2
6TB6C-2
6TB10C-2
C-24B
C-79A
43612Z
Switch, Liquid Sensing
Includes:
Type PP, Water
Type IC/R1-U
Type IC/R1-V
Flow, 22206
Float
43617J
Alarm Switchboards
Includes:
IC/S
IC/S10-8
IC/S10-10
IC/S20-16
IC/S20-20
43617Z
Switch-Pressure/ Thermostatic
Includes:
Type 222-10:
Model NB-4
Model NL
43618Z
Switches General
Includes:
S-193A (Mod.)
S2JRM3-22L
IC/DM-1-0
JRM-300
S3JL3-5
EOT Contact Makers
B-171A
BZ-3YST
Overspeed Sensing, IC/L3C
1SR2C4A2
4362IM
Monitoring Devices, Radiation Intensity
Includes:
AN/PDR-18( )
AN/PDR-27( )
AN/PDR-43( )
AN/PDR-56( )
AN/PDR-65
CP-95( )/PD
DT-60( )/PD
IM-143( )/PD
IM-153( )/PD
FF-1052 Class
Prepared 9-18-76



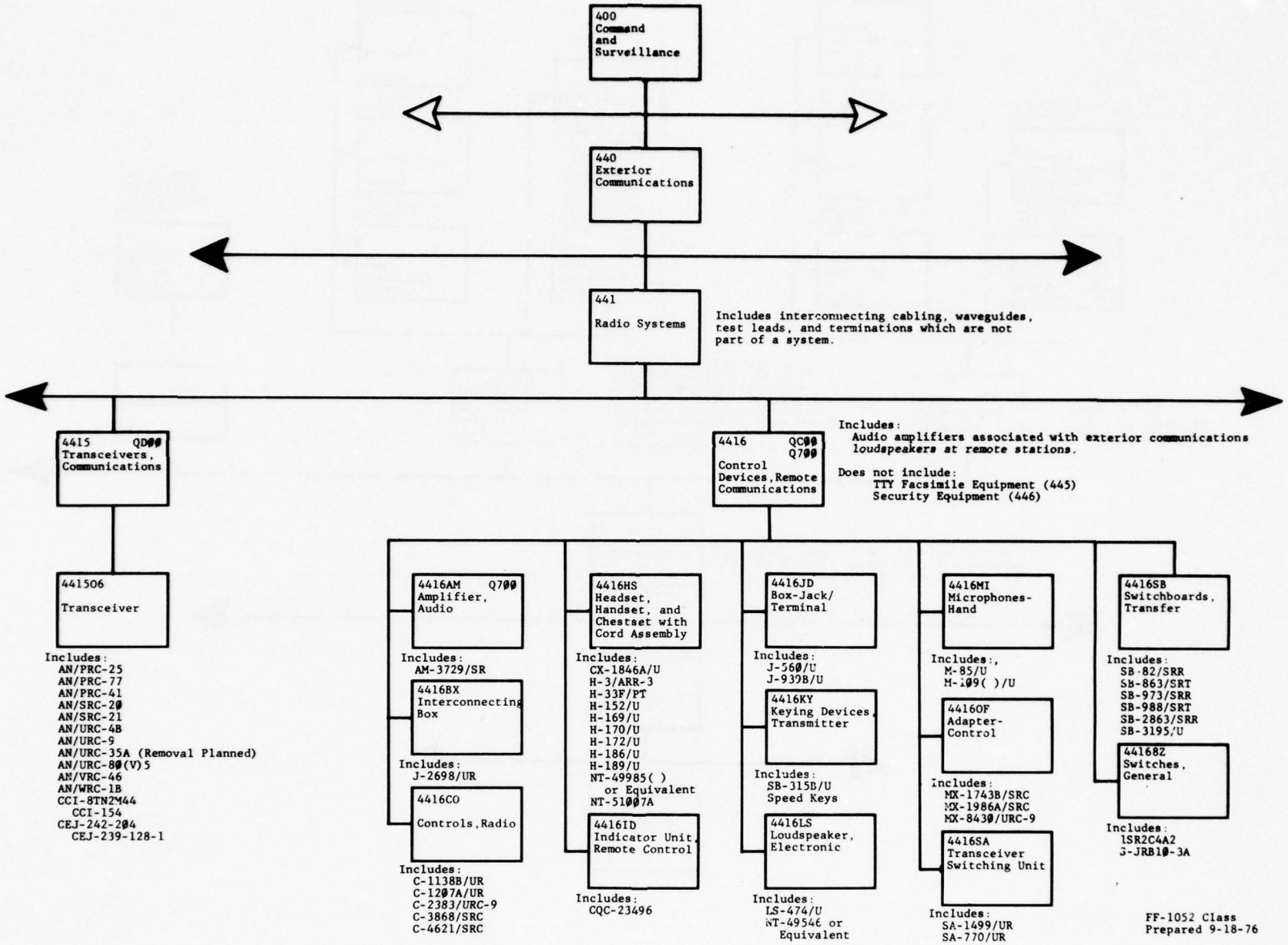
FF-1052 Class
Prepared 9-18-76

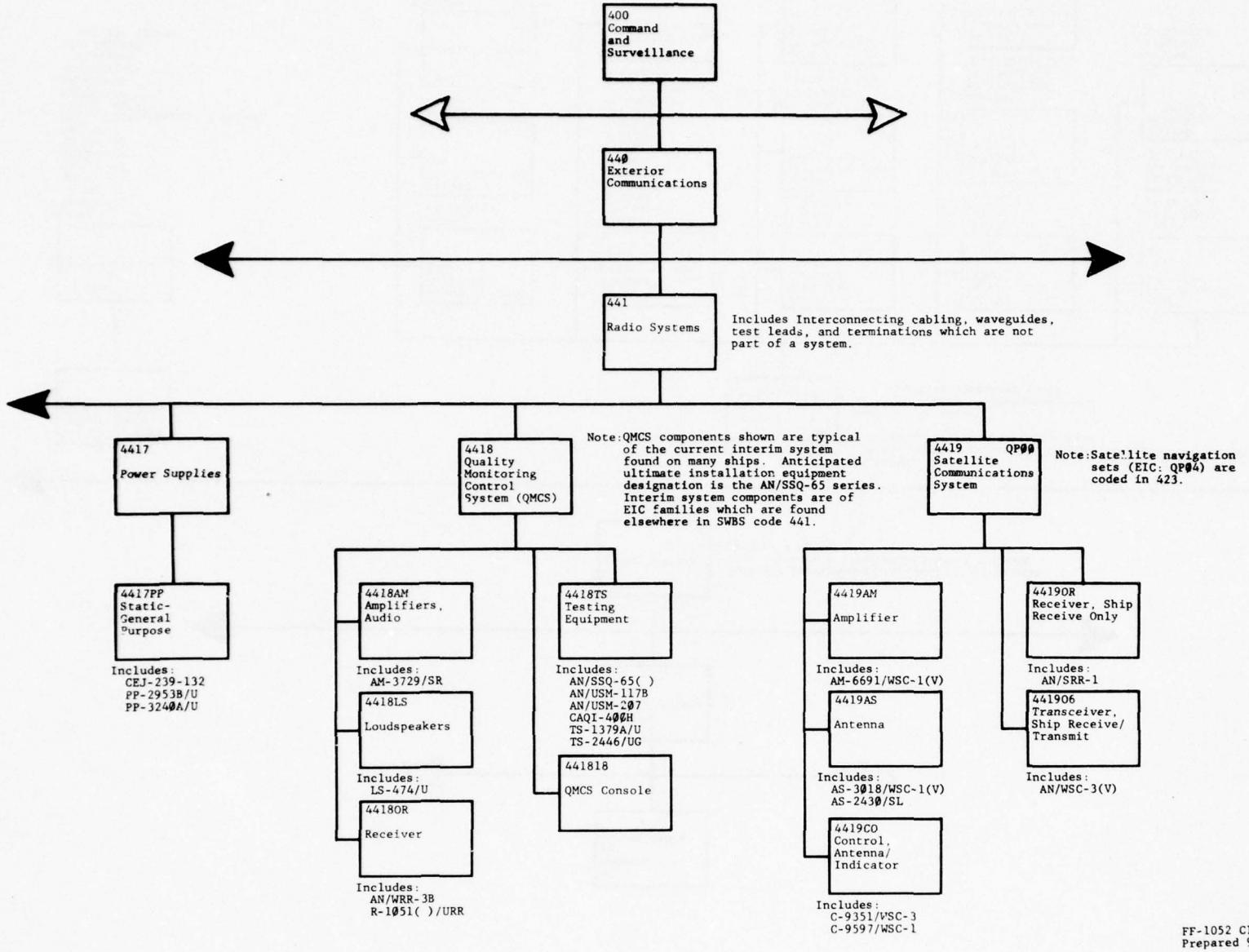


FF-1052 Class
Prepared 9-18-76

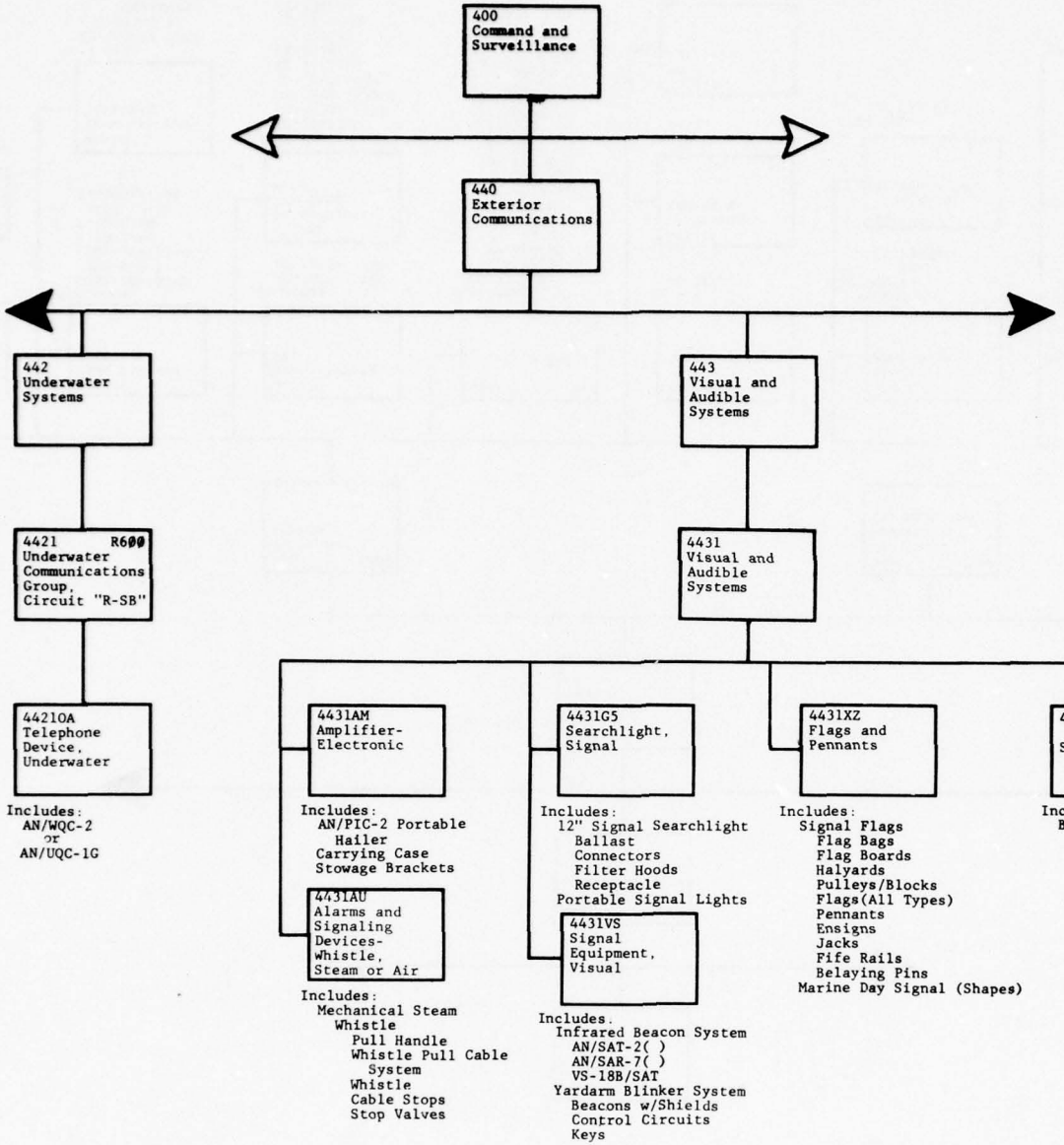


FF-1052 Class
Prepared 9-18-76

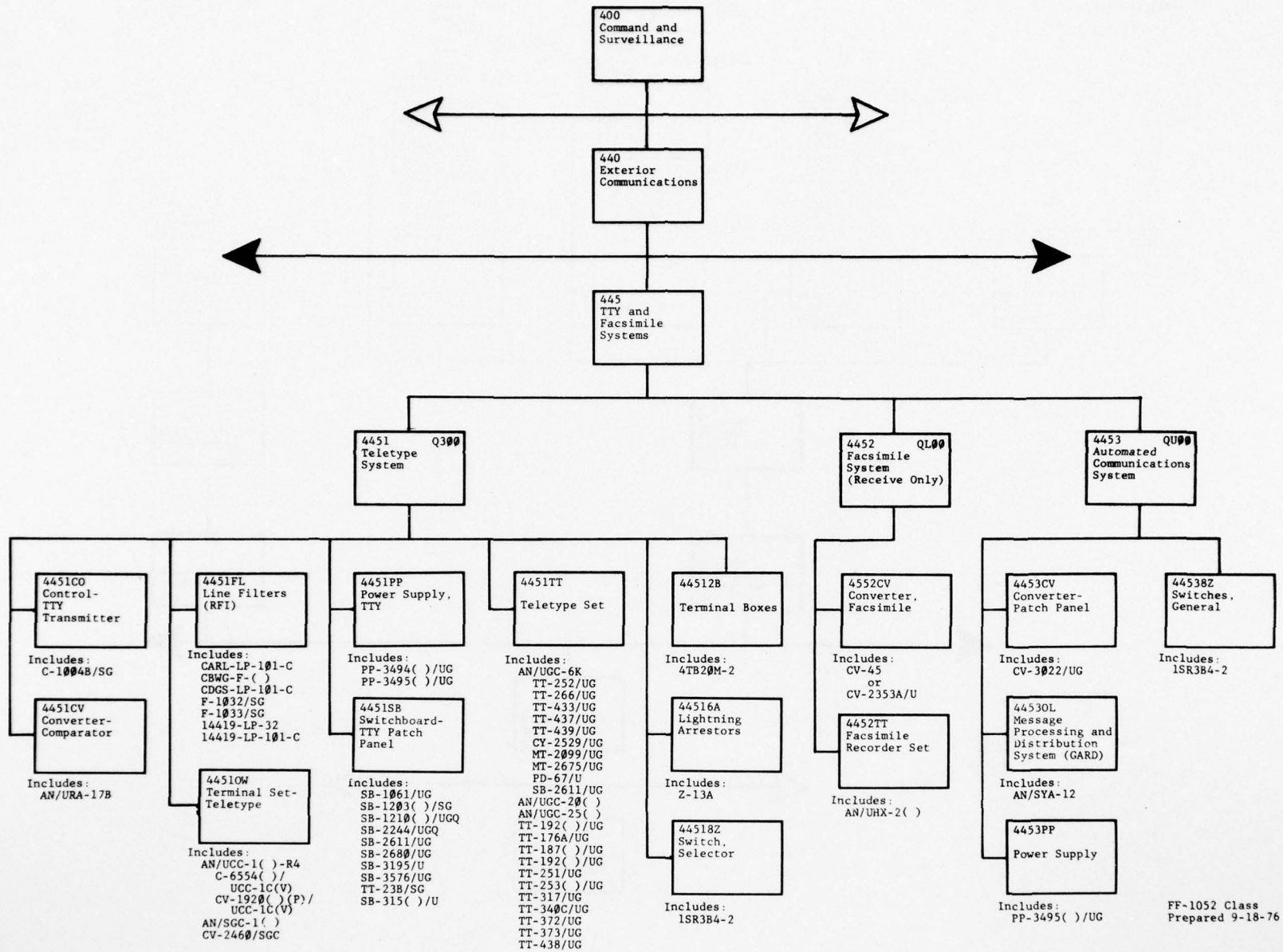

400
Command and Surveillance
440
Exterior Communications
441
Radio Systems
Includes interconnecting cabling, waveguides, test leads, and terminations which are not part of a system.
4415 QD@@
Transceivers, Communications
441506
Transceiver
Includes:
AN/PRC-25
AN/PRC-77
AN/PRC-41
AN/SRC-2@
AN/SRC-21
AN/URC-4B
AN/URC-9
AN/URC-35A (Removal Planned)
AN/URC-8@(V)5
AN/VRC-46
AN/WRC-1B
CCI-8TN2M44
CCI-154
CEJ-242-2@4
CEJ-239-128-1
4416 QC@@ Q7@@
Control Devices, Remote Communications
Includes:
Audio amplifiers associated with exterior communications loudspeakers at remote stations.
Does not include:
TTY Facsimile Equipment (445)
Security Equipment (446)
4416AM Q7@@
Amplifier, Audio
Includes:
AM-3729/SR
4416BX
Interconnecting Box
Includes:
J-2698/UR
4416CO
Controls, Radio
Includes:
C-1138B/UR
C-12@7A/UR
C-2383/URC-9
C-3868/SRC
C-4621/SRC
4416HS
Headset, Handset, and Chestset with Cord Assembly
Includes:
CX-1846A/U
H-3/ARR-3
H-33F/PT
H-152/U
H-169/U
H-170/U
H-172/U
H-186/U
H-189/U
NT-49985( )
or Equivalent
NT-51@@7A
4416ID
Indicator Unit, Remote Control
Includes:
CQC-23496
4416JD
Box-Jack/ Terminal
Includes:
J-56@/U
J-939B/U
4416KY
Keying Devices, Transmitter
Includes:
SB-315B/U
Speed Keys
4416LS
Loudspeaker, Electronic
Includes:
LS-474/U
NT-49546 or Equivalent
4416MI
Microphones-Hand
Includes:,
M-85/U
M-1@9( )/U
4416OF
Adapter-Control
Includes:
MX-1743B/SRC
MX-1986A/SRC
MX-843@/URC-9
4416SA
Transceiver Switching Unit
Includes:
SA-1499/UR
SA-770/UR
4416SB
Switchboards, Transfer
Includes:
SB-82/SRR
SB-863/SRT
SB-973/SRR
SB-988/SRT
SB-2863/SRR
SB-3195/U
44168Z
Switches, General
Includes:
1SR2C4A2
3-JRB1@-3A
FF-1052 Class
Prepared 9-18-76

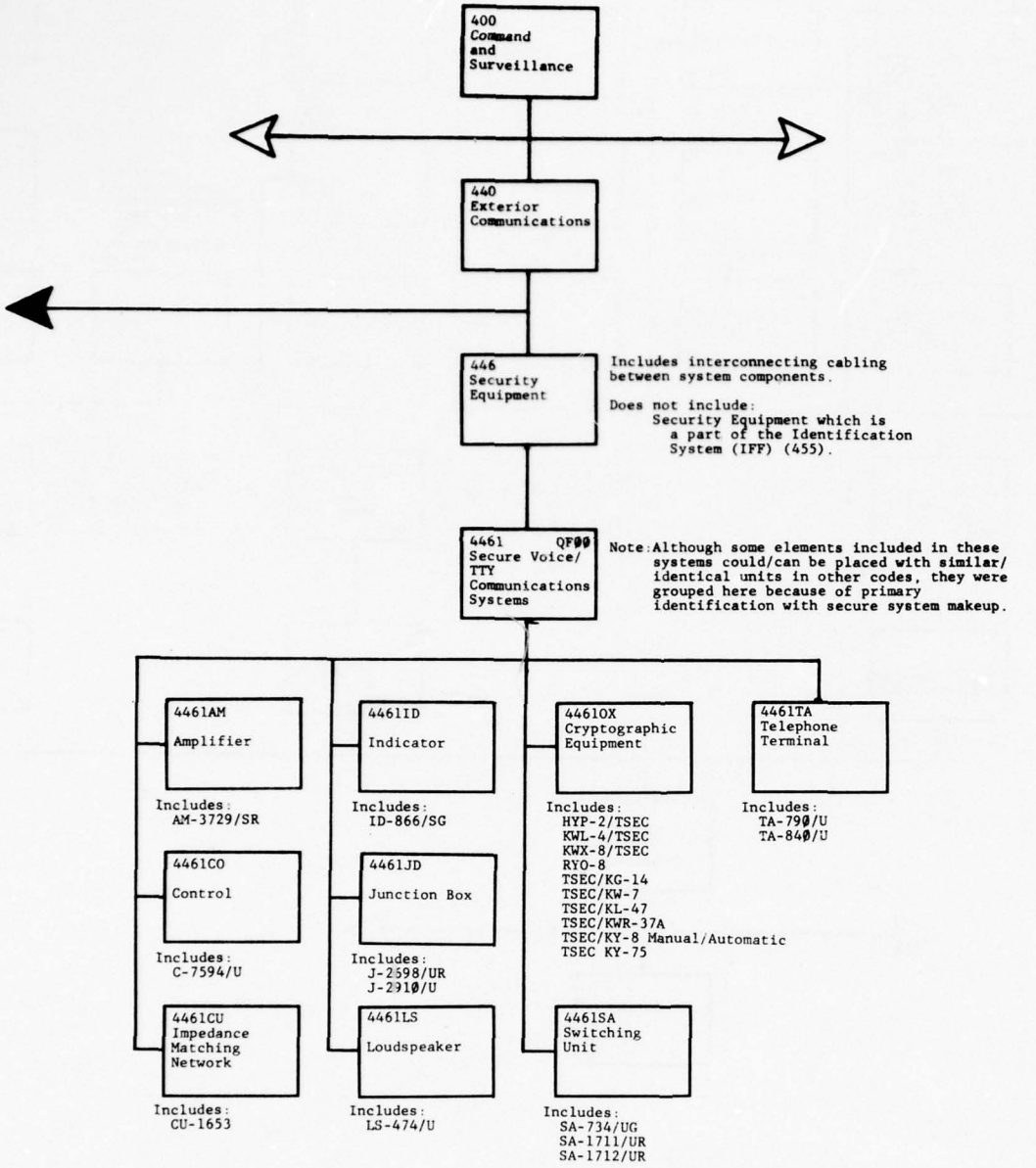


FF-1052 Class
Prepared 9-18-76

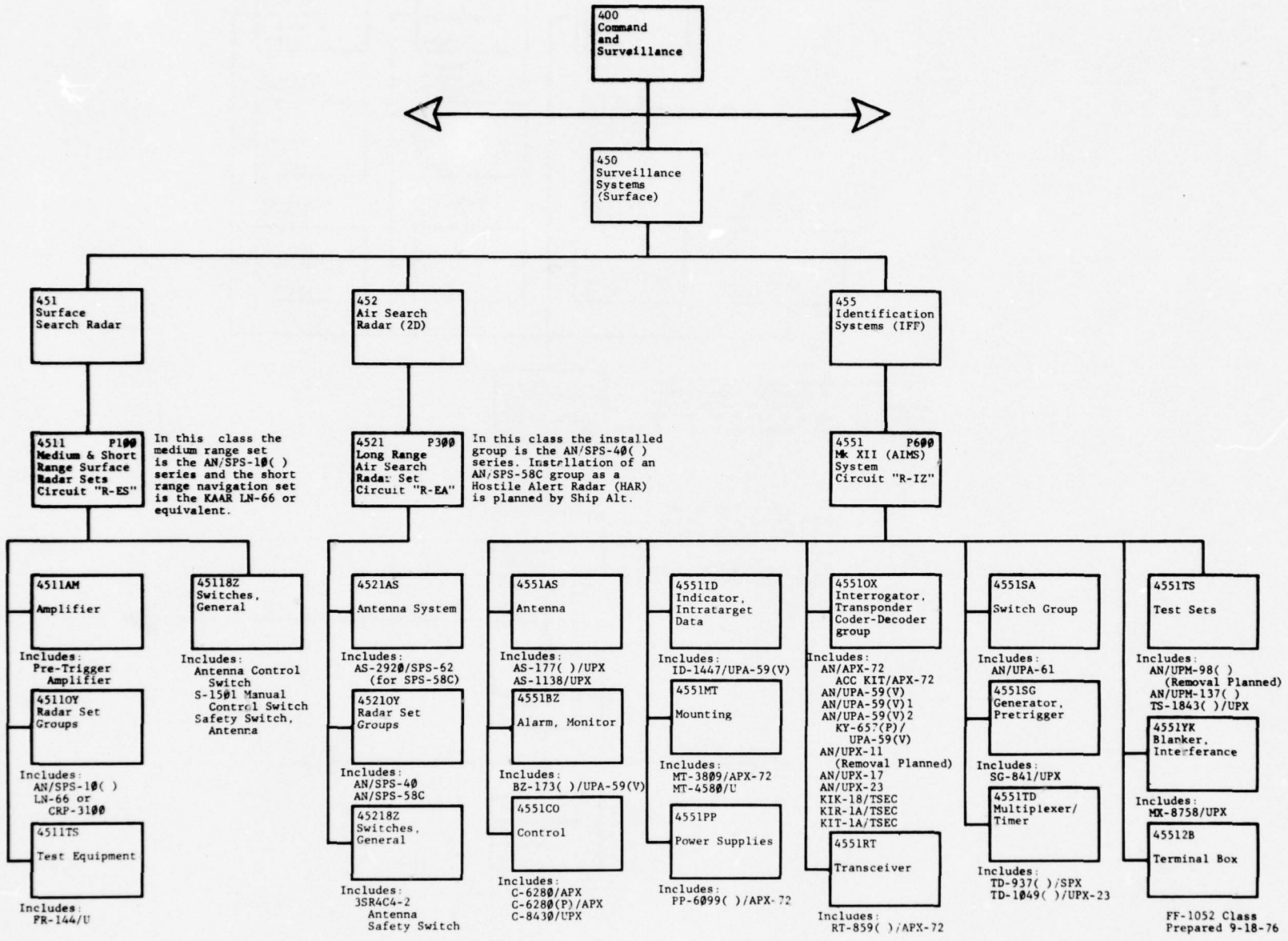


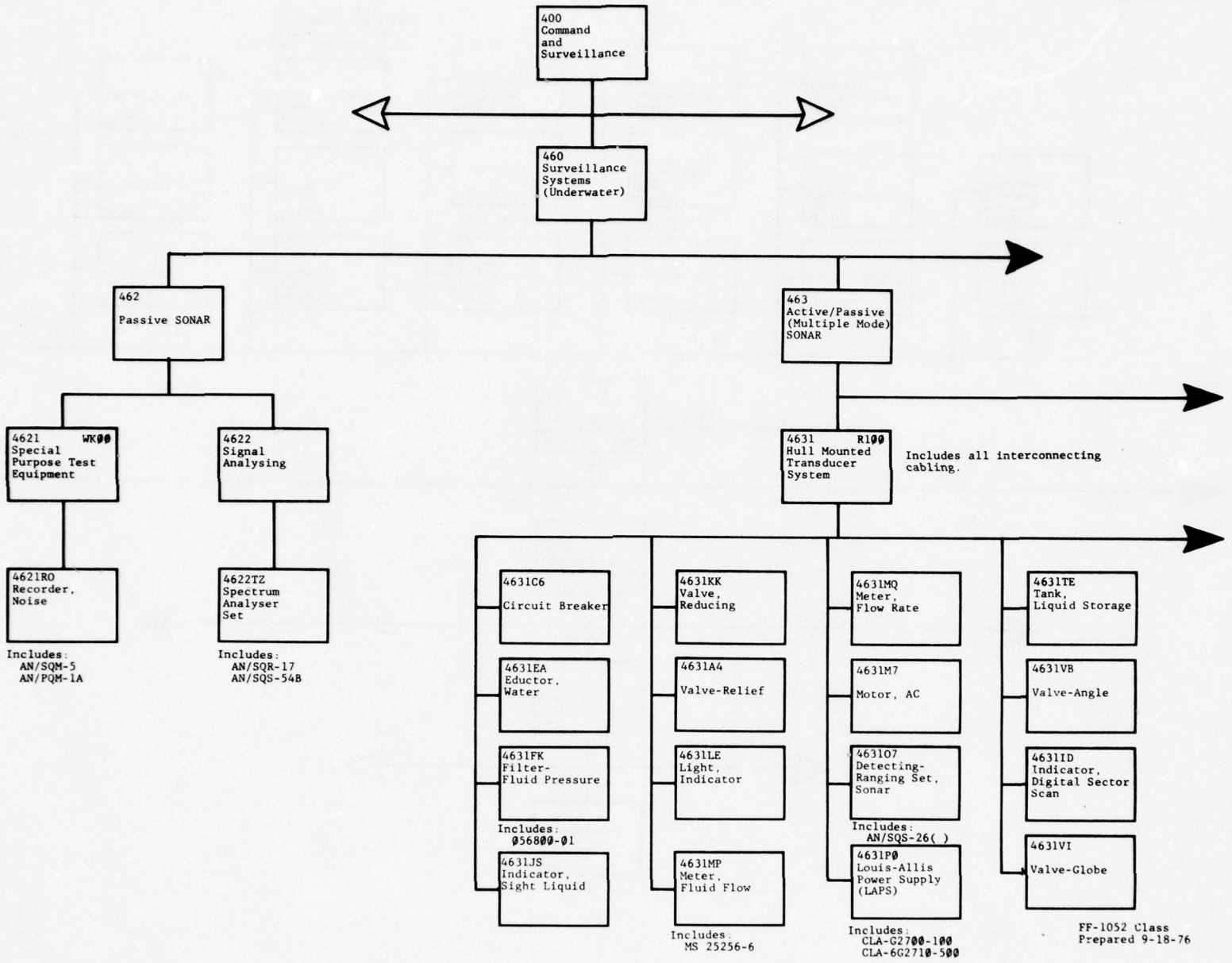
FF-1052 Class
Prepared 9-18-76

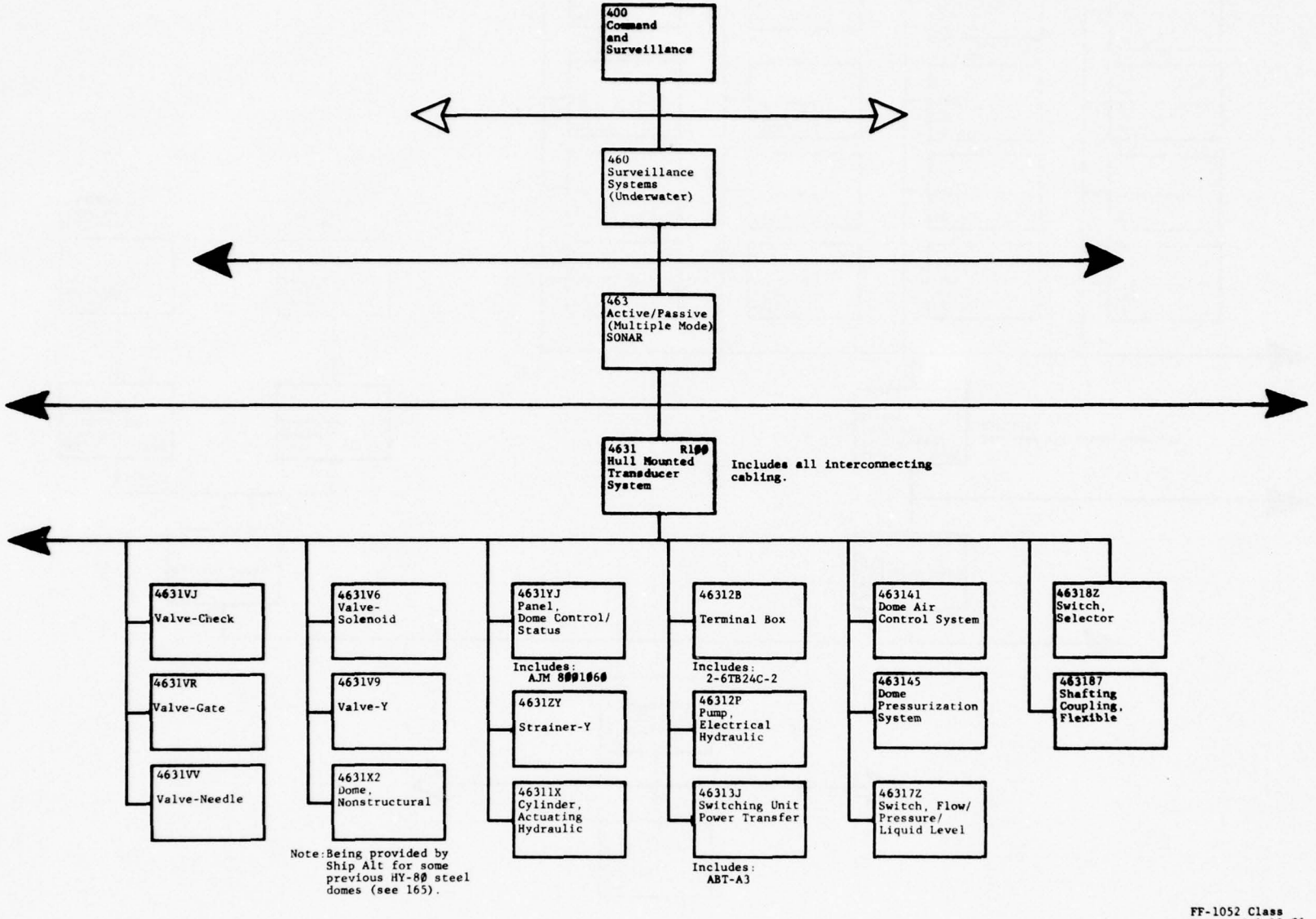

400
Command and Surveillance
440
Exterior Communications
445
TTY and Facsimile Systems
4451 Q300
Teletype System
4452 QL00
Facsimile System (Receive Only)
4453 QU00
Automated Communications System
4451CO
Control-TTY Transmitter
Includes:
C-1004B/SG
4451CV
Converter-Comparator
Includes:
AN/URA-17B
4451FL
Line Filters (RFI)
Includes:
CARL-LP-101-C
CBWG-F-( )
CDGS-LP-101-C
F-1032/SG
F-1033/SG
14419-LP-32
14419-LP-101-C
4451OW
Terminal Set-Teletype
Includes:
AN/UCC-1( )-R4
C-6554( )/
UCC-1C(V)
CV-1920( )(P)/
UCC-1C(V)
AN/SGC-1( )
CV-2460/SGC
4451PP
Power Supply, TTY
Includes:
PP-3494( )/UG
PP-3495( )/UG
4451SB
Switchboard-TTY Patch Panel
Includes:
SB-1061/UG
SB-1203( )/SG
SB-1210( )/UGQ
SB-2244/UGQ
SB-2611/UG
SB-2680/UG
SB-3195/U
SB-3576/UG
TT-23B/SG
SB-315( )/U
4451TT
Teletype Set
Includes:
AN/UGC-6K
TT-252/UG
TT-266/UG
TT-433/UG
TT-437/UG
TT-439/UG
CY-2529/UG
MT-2099/UG
MT-2675/UG
PD-67/U
SB-2611/UG
AN/UGC-20( )
AN/UGC-25( )
TT-192( )/UG
TT-176A/UG
TT-187( )/UG
TT-192( )/UG
TT-251/UG
TT-253( )/UG
TT-317/UG
TT-340C/UG
TT-372/UG
TT-373/UG
TT-438/UG
44512B
Terminal Boxes
Includes:
4TB20M-2
44516A
Lightning Arrestors
Includes:
Z-13A
44518Z
Switch, Selector
Includes:
1SR3B4-2
4552CV
Converter, Facsimile
Includes:
CV-45
or
CV-2353A/U
4452TT
Facsimile Recorder Set
Includes:
AN/UHX-2( )
4453CV
Converter-Patch Panel
Includes:
CV-3022/UG
44530L
Message Processing and Distribution System (GARD)
Includes:
AN/SYA-12
4453PP
Power Supply
Includes:
PP-3495( )/UG
44538Z
Switches, General
Includes:
1SR3B4-2
FF-1052 Class
Prepared 9-18-76



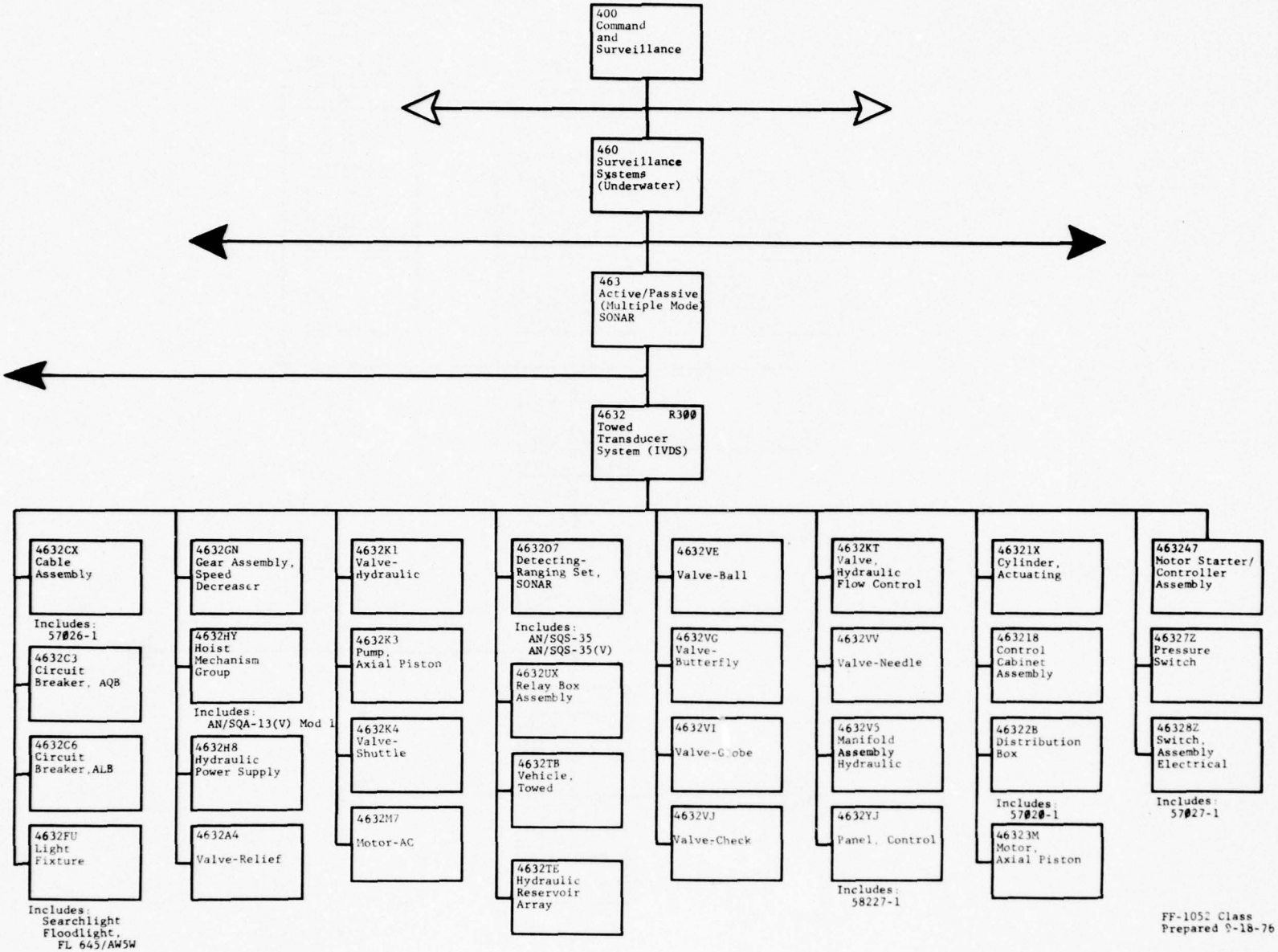
FF-1052 Class
Prepared 9-18-76

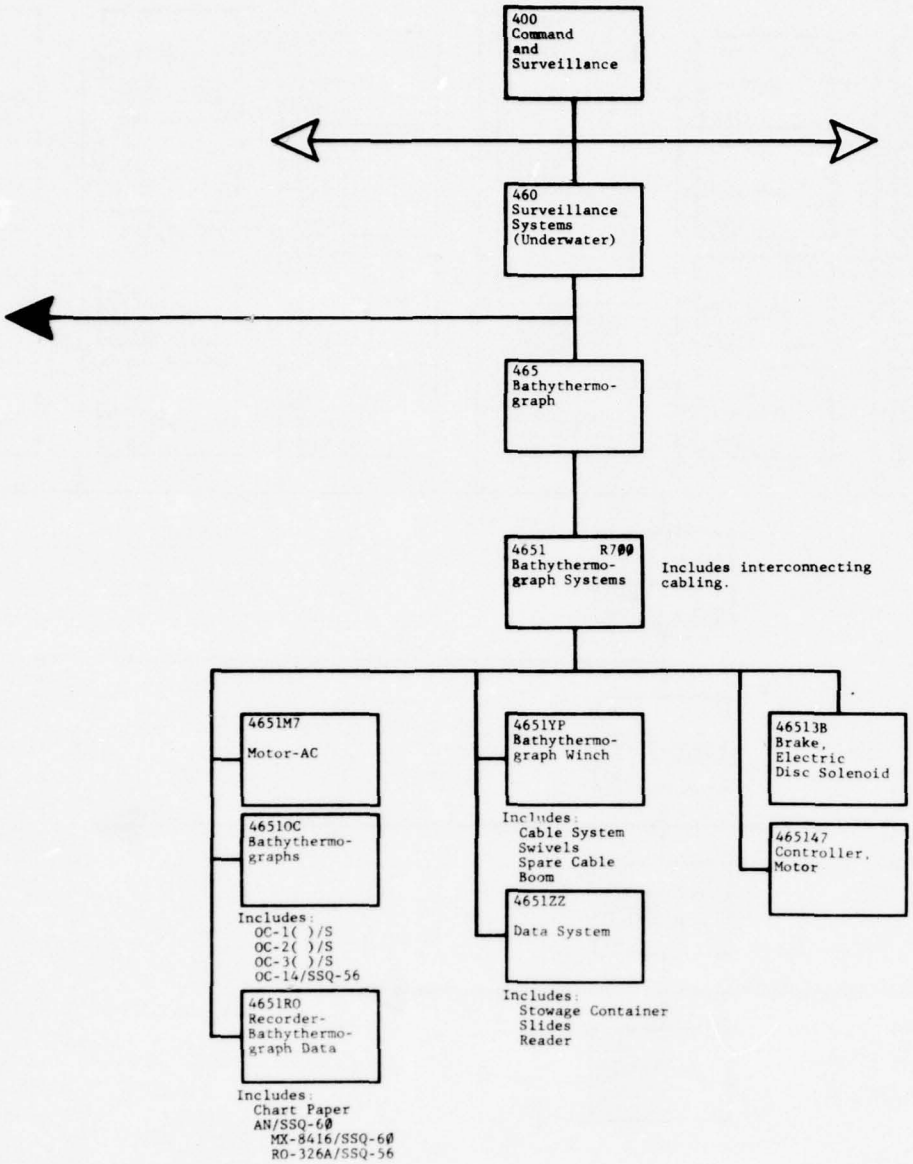

400
Command and Surveillance
450
Surveillance Systems (Surface)
451
Surface Search Radar
452
Air Search Radar (2D)
455
Identification Systems (IFF)
4511 P100
Medium & Short Range Surface Radar Sets Circuit "R-ES"
In this class the medium range set is the AN/SPS-10( ) series and the short range navigation set is the KAAR LN-66 or equivalent.
4521 P300
Long Range Air Search Radar Set Circuit "R-EA"
In this class the installed group is the AN/SPS-40( ) series. Installation of an AN/SPS-58C group as a Hostile Alert Radar (HAR) is planned by Ship Alt.
4551 P600
Mk XII (AIMS) System Circuit "R-IZ"
4511AM
Amplifier
Includes:
Pre-Trigger Amplifier
45110Y
Radar Set Groups
Includes:
AN/SPS-10( )
LN-66 or
CRP-3100
4511TS
Test Equipment
Includes:
FR-144/U
45118Z
Switches, General
Includes:
Antenna Control Switch
S-1501 Manual Control Switch
Safety Switch, Antenna
4521AS
Antenna System
Includes:
AS-2920/SPS-52 (for SPS-58C)
45210Y
Radar Set Groups
Includes:
AN/SPS-40
AN/SPS-58C
45218Z
Switches, General
Includes:
3SR4C4-2 Antenna Safety Switch
4551AS
Antenna
Includes:
AS-177( )/UPX
AS-1138/UPX
4551BZ
Alarm, Monitor
Includes:
BZ-173( )/UPA-59(V)
4551CO
Control
Includes:
C-6280/APX
C-6280(P)/APX
C-8430/UPX
4551ID
Indicator, Intratarget Data
Includes:
ID-1447/UPA-59(V)
4551MT
Mounting
Includes:
MT-3809/APX-72
MT-4580/U
4551PP
Power Supplies
Includes:
PP-6099( )/APX-72
45510X
Interrogator, Transponder Coder-Decoder group
Includes:
AN/APX-72
ACC KIT/APX-72
AN/UPA-59(V)
AN/UPA-59(V)1
AN/UPA-59(V)2
KY-657(P)/UPA-59(V)
AN/UPX-11 (Removal Planned)
AN/UPX-17
AN/UPX-23
KIK-18/TSEC
KIR-1A/TSEC
KIT-1A/TSEC
4551RT
Transceiver
Includes:
RT-859( )/APX-72
4551SA
Switch Group
Includes:
AN/UPA-61
4551SG
Generator, Pretrigger
Includes:
SG-841/UPX
4551TD
Multiplexer/ Timer
Includes:
TD-937( )/SPX
TD-1049( )/UPX-23
4551TS
Test Sets
Includes:
AN/UPM-98( ) (Removal Planned)
AN/UPM-137( )
TS-1843( )/UPX
4551YK
Blanker, Interferance
Includes:
MX-8758/UPX
45512B
Terminal Box
FF-1052 Class
Prepared 9-18-76


400
Command and Surveillance
460
Surveillance Systems (Underwater)
462
Passive SONAR
463
Active/Passive (Multiple Mode) SONAR
4621 WK00
Special Purpose Test Equipment
4622
Signal Analysing
4621RO
Recorder, Noise
Includes:
AN/SQM-5
AN/PQM-1A
4622TZ
Spectrum Analyser Set
Includes:
AN/SQR-17
AN/SQS-54B
4631 R100
Hull Mounted Transducer System
Includes all interconnecting cabling.
4631C6
Circuit Breaker
4631EA
Eductor, Water
4631FK
Filter-Fluid Pressure
Includes:
056800-01
4631JS
Indicator, Sight Liquid
4631KK
Valve, Reducing
4631A4
Valve-Relief
4631LE
Light, Indicator
4631MP
Meter, Fluid Flow
Includes:
MS 25256-6
4631MQ
Meter, Flow Rate
4631M7
Motor, AC
4631O7
Detecting-Ranging Set, Sonar
Includes:
AN/SQS-26( )
4631P0
Louis-Allis Power Supply (LAPS)
Includes:
CLA-G2700-100
CLA-6G2710-500
4631TE
Tank, Liquid Storage
4631VB
Valve-Angle
4631ID
Indicator, Digital Sector Scan
4631VI
Valve-Globe
FF-1052 Class
Prepared 9-18-76

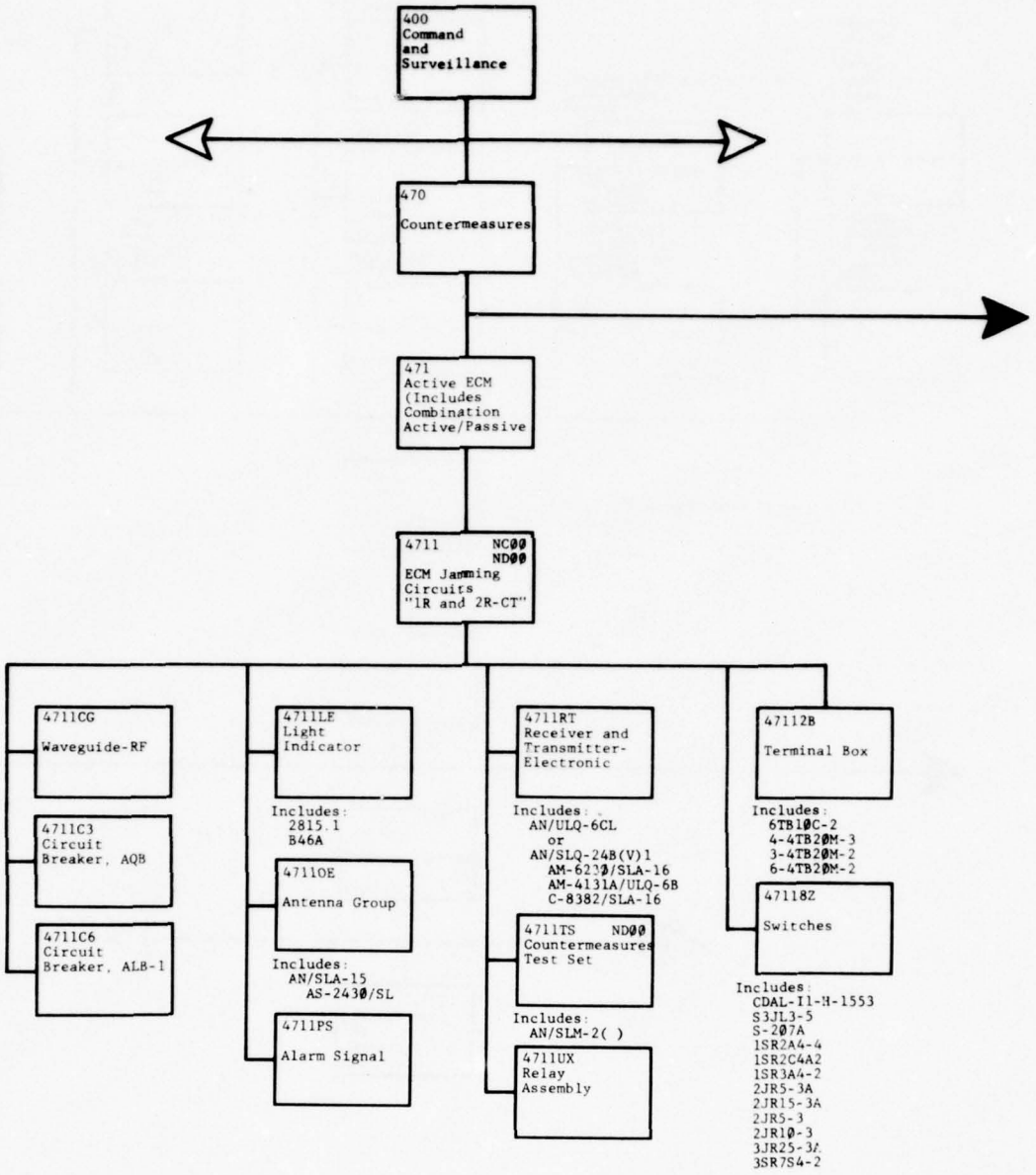


FF-1052 Class
Prepared 9-18-76

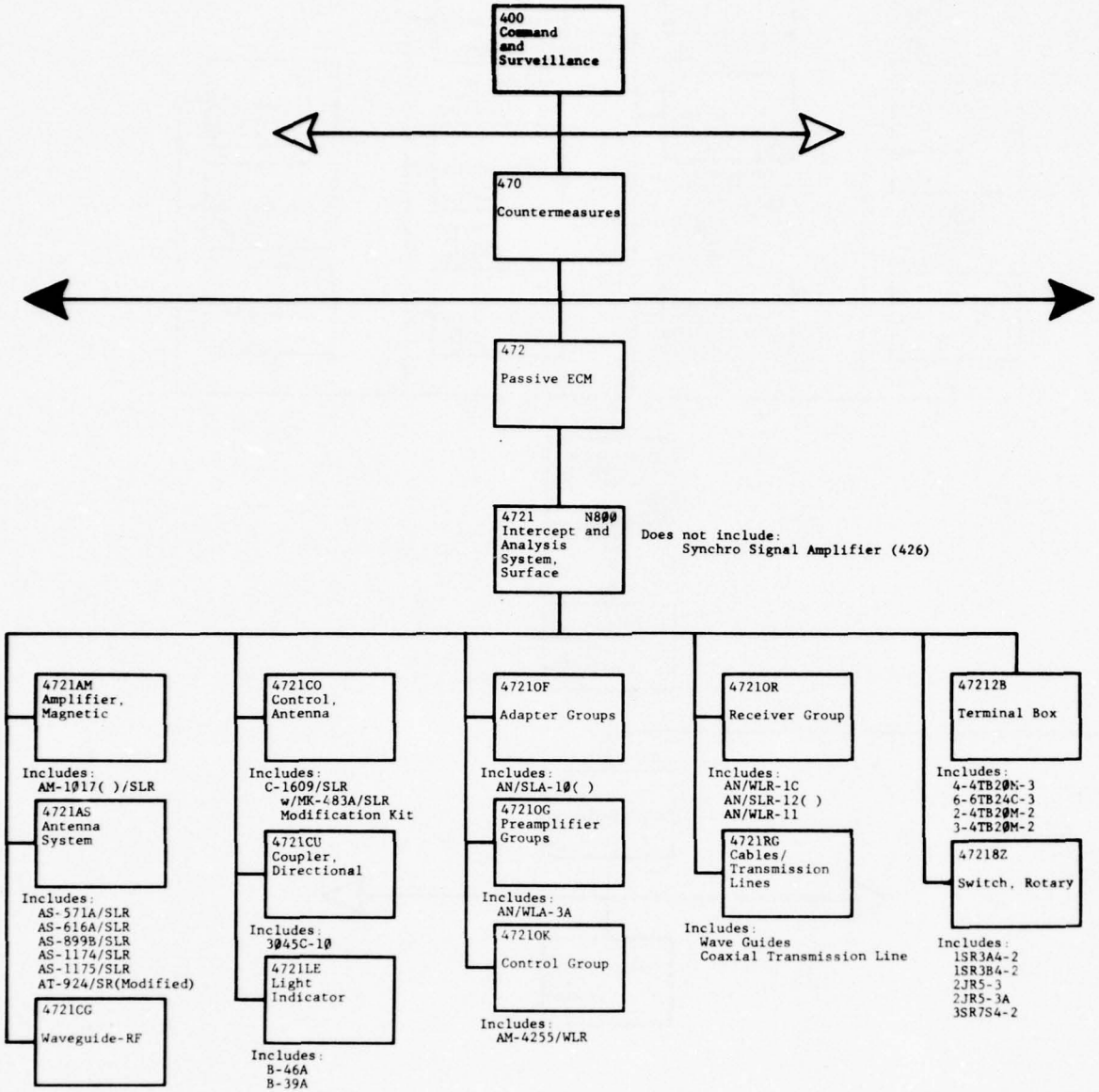

400
Command and Surveillance
460
Surveillance Systems (Underwater)
463
Active/Passive (Multiple Mode) SONAR
4632 R300
Towed Transducer System (IVDS)
4632CX
Cable Assembly
Includes:
57026-1
4632C3
Circuit Breaker, AQB
4632C6
Circuit Breaker, ALB
4632FU
Light Fixture
Includes:
Searchlight Floodlight, FL 645/AW5W
4632GN
Gear Assembly, Speed Decreaser
4632HY
Hoist Mechanism Group
Includes:
AN/SQA-13(V) Mod 1
4632H8
Hydraulic Power Supply
4632A4
Valve-Relief
4632K1
Valve-Hydraulic
4632K3
Pump, Axial Piston
4632K4
Valve-Shuttle
4632M7
Motor-AC
463207
Detecting-Ranging Set, SONAR
Includes:
AN/SQS-35
AN/SQS-35(V)
4632UX
Relay Box Assembly
4632TB
Vehicle, Towed
4632TE
Hydraulic Reservoir Array
4632VE
Valve-Ball
4632VG
Valve-Butterfly
4632VI
Valve-Globe
4632VJ
Valve-Check
4632KT
Valve, Hydraulic Flow Control
4632VV
Valve-Needle
4632V5
Manifold Assembly Hydraulic
4632YJ
Panel, Control
Includes:
58227-1
46321X
Cylinder, Actuating
463218
Control Cabinet Assembly
46322B
Distribution Box
Includes:
57020-1
46323M
Motor, Axial Piston
463247
Motor Starter/ Controller Assembly
46327Z
Pressure Switch
46328Z
Switch, Assembly Electrical
Includes:
57027-1
FF-1052 Class
Prepared 9-18-76



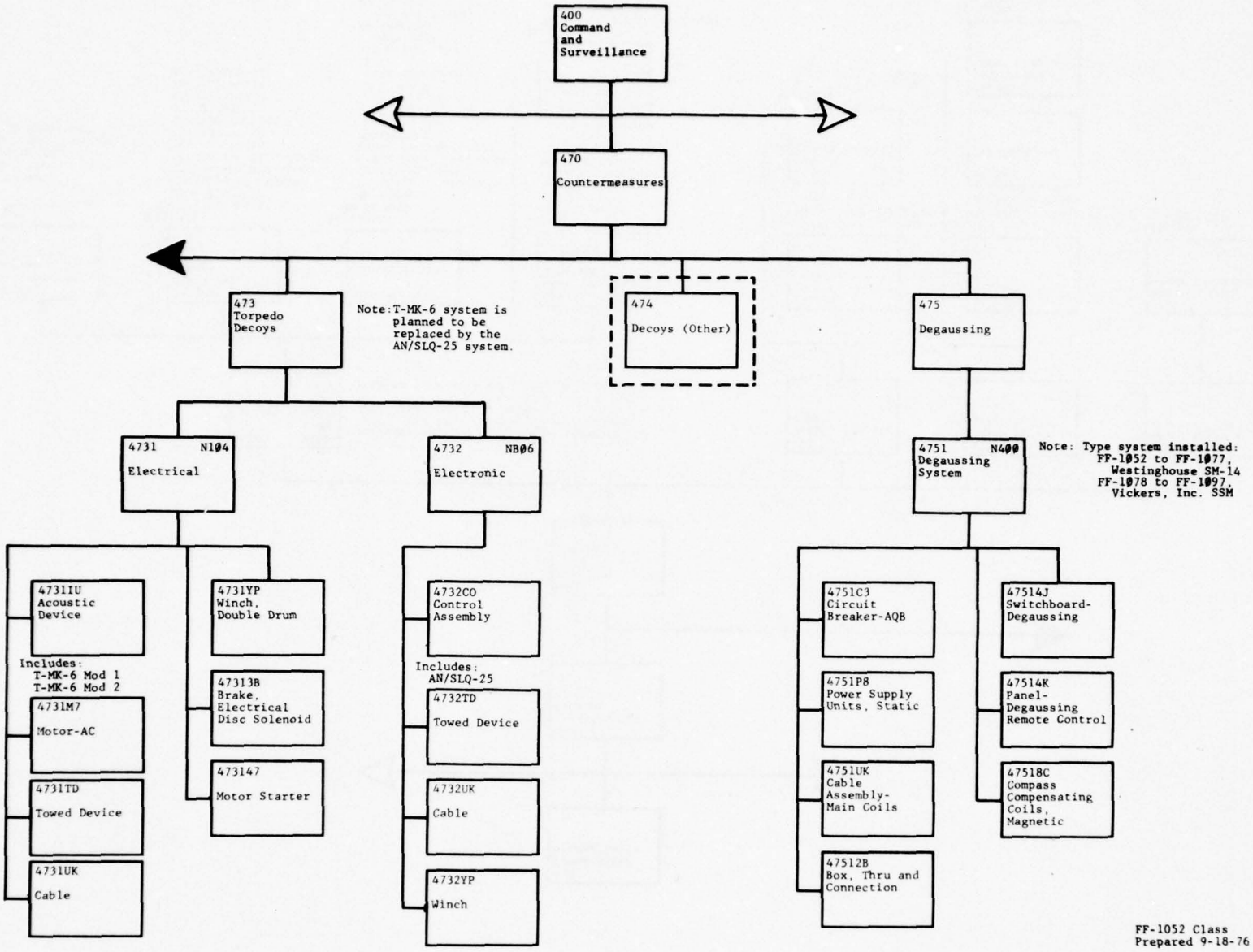
FF-1052 Class
Prepared 9-18-76



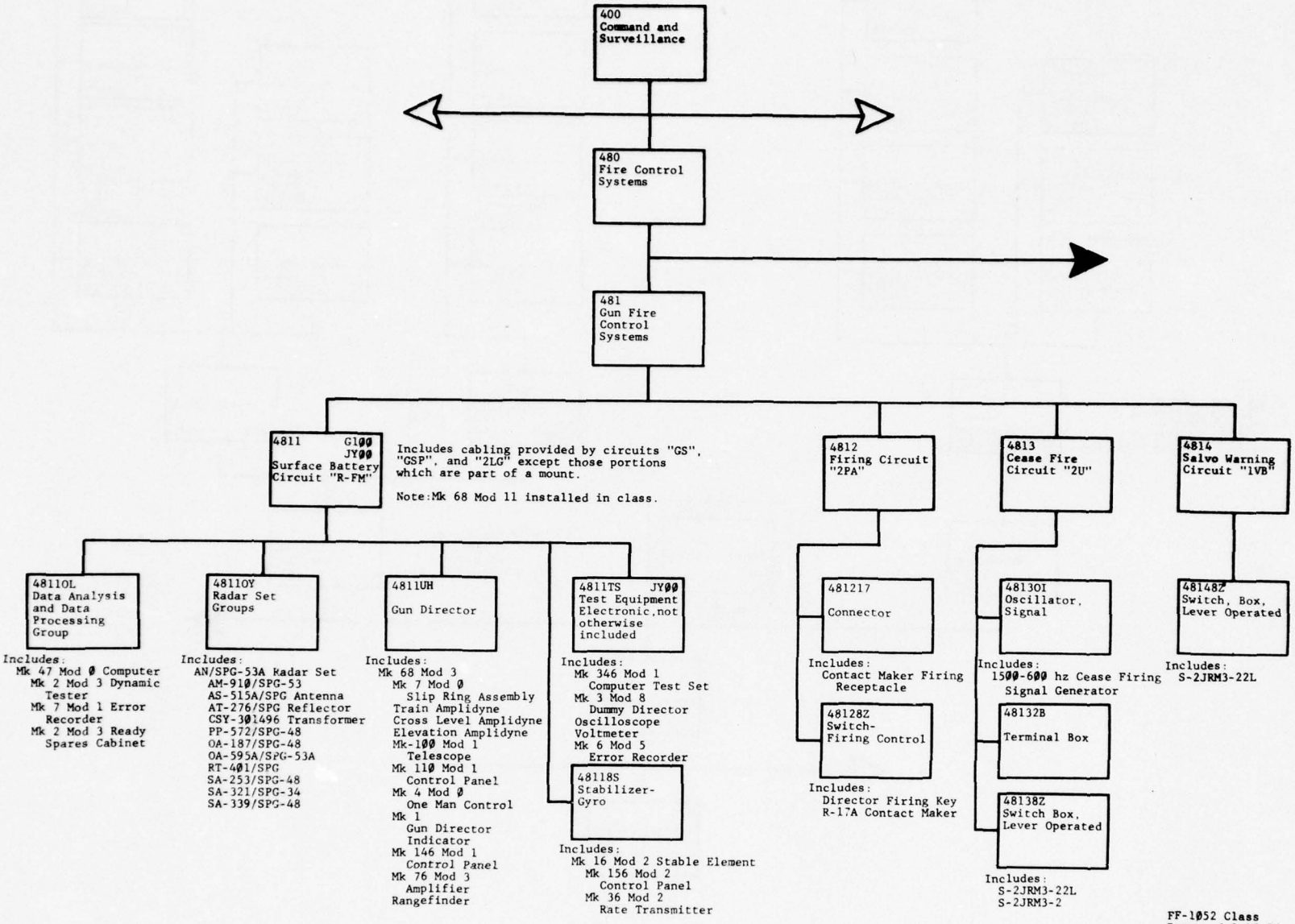
FF-1052 Class
Prepared 9-18-76

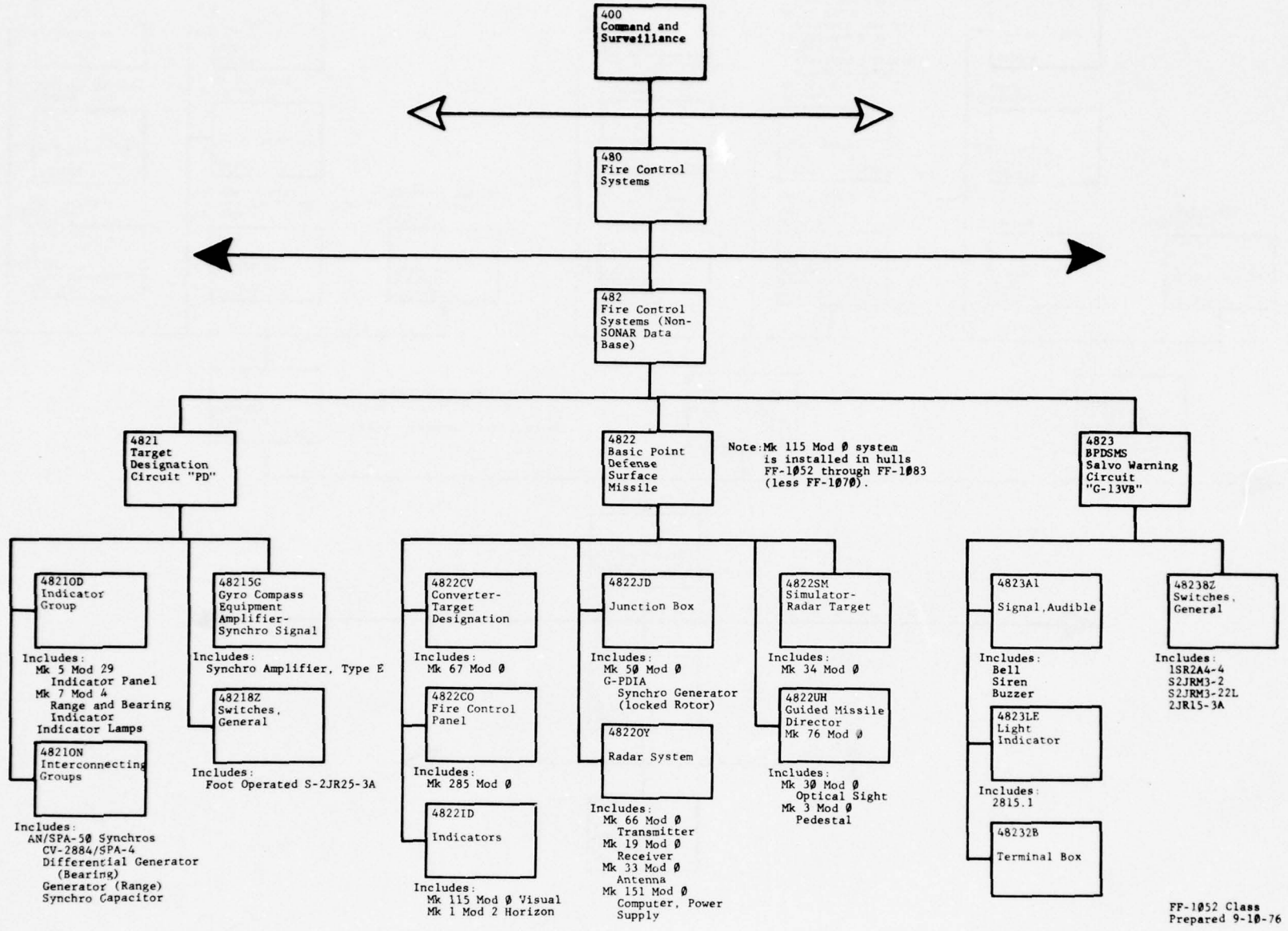


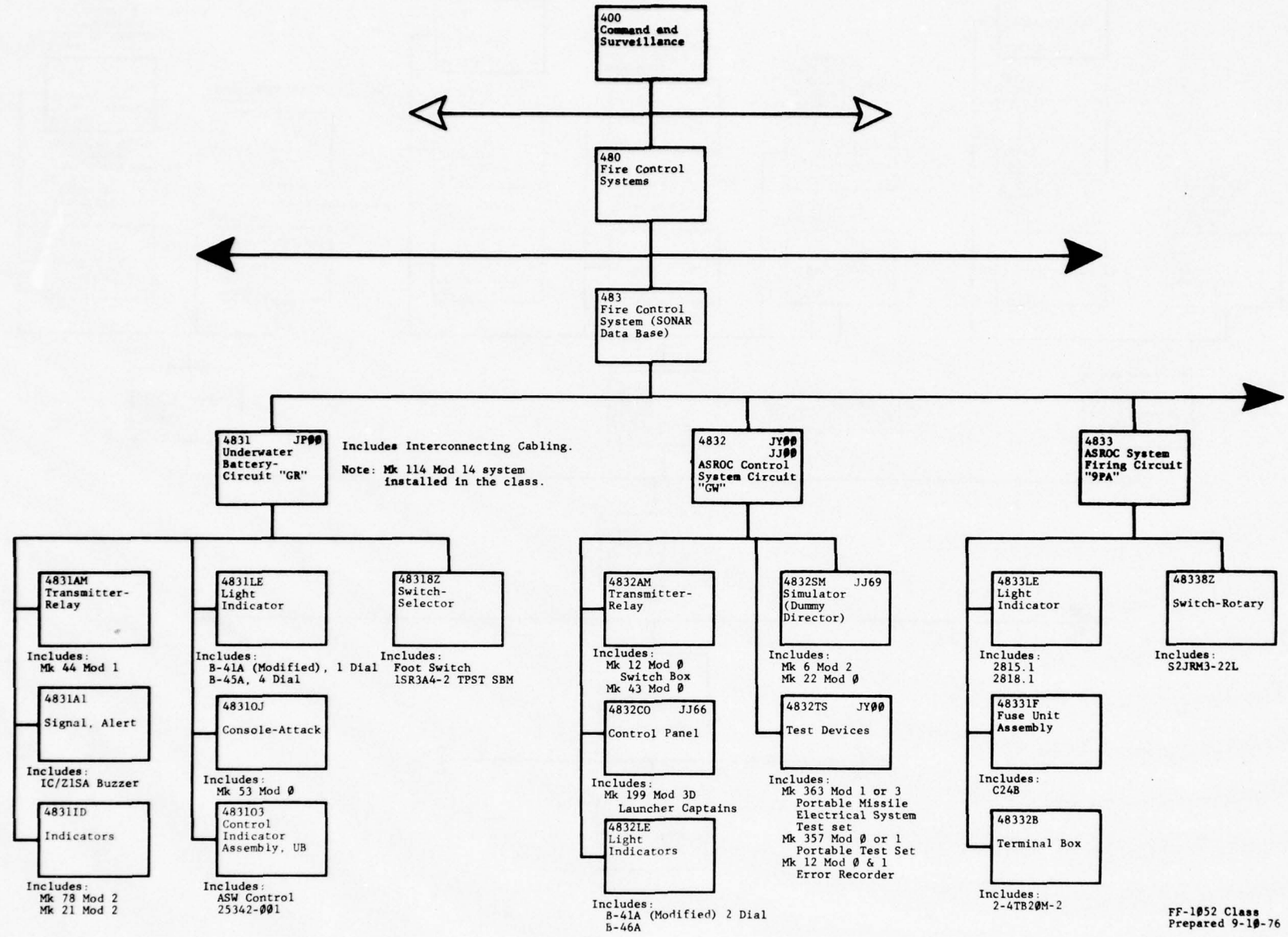
FF-1052 Class
Prepared 9-18-76

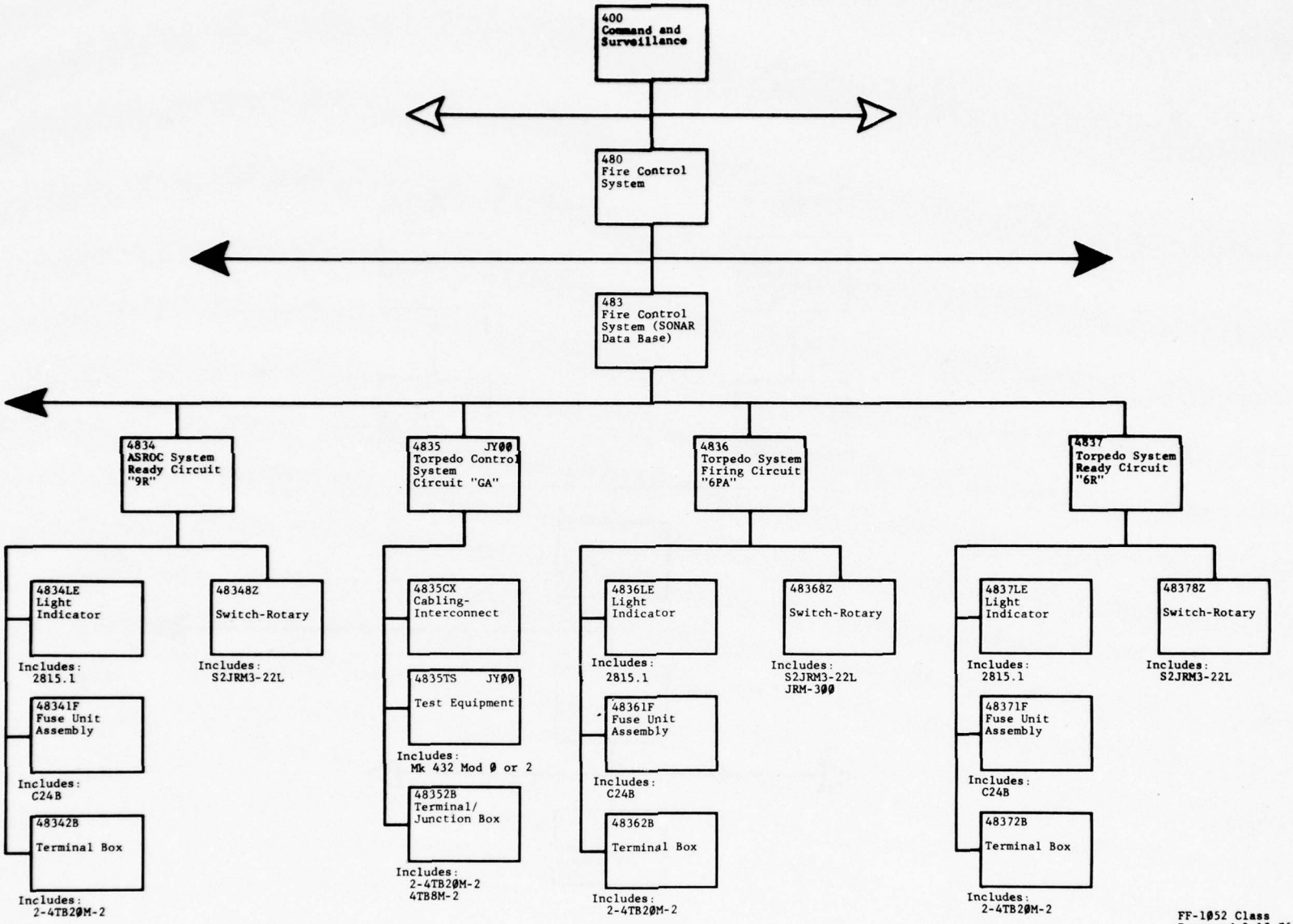


FF-1052 Class
Prepared 9-18-76

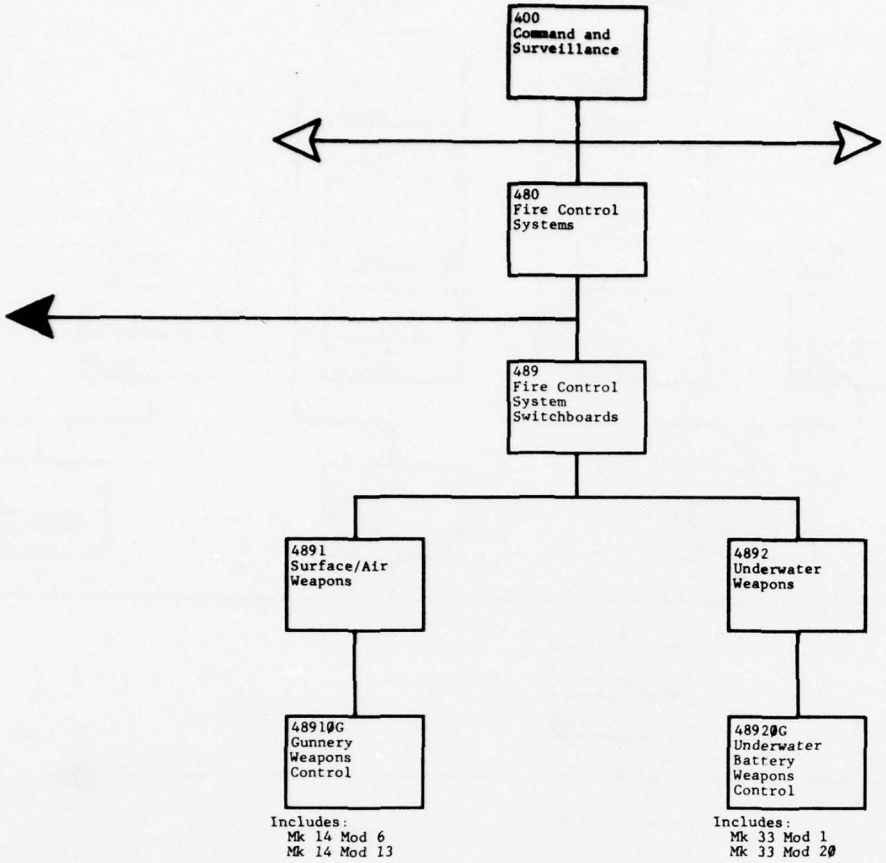

400
Command and Surveillance
480
Fire Control Systems
481
Gun Fire Control Systems
4811 G100 JY00
Surface Battery Circuit "R-FM"
Includes cabling provided by circuits "GS", "GSP", and "2LG" except those portions which are part of a mount.
Note:Mk 68 Mod 11 installed in class.
4812
Firing Circuit "2PA"
4813
Cease Fire Circuit "2U"
4814
Salvo Warning Circuit "1VB"
48110L
Data Analysis and Data Processing Group
Includes:
Mk 47 Mod 0 Computer
Mk 2 Mod 3 Dynamic Tester
Mk 7 Mod 1 Error Recorder
Mk 2 Mod 3 Ready Spares Cabinet
48110Y
Radar Set Groups
Includes:
AN/SPG-53A Radar Set
AM-910/SPG-53
AS-515A/SPG Antenna
AT-276/SPG Reflector
CSY-301496 Transformer
PP-572/SPG-48
OA-187/SPG-48
OA-595A/SPG-53A
RT-401/SPG
SA-253/SPG-48
SA-321/SPG-34
SA-339/SPG-48
4811UH
Gun Director
Includes:
Mk 68 Mod 3
Mk 7 Mod 0
Slip Ring Assembly
Train Amplidyne
Cross Level Amplidyne
Elevation Amplidyne
Mk-100 Mod 1
Telescope
Mk 110 Mod 1
Control Panel
Mk 4 Mod 0
One Man Control
Mk 1
Gun Director Indicator
Mk 146 Mod 1
Control Panel
Mk 76 Mod 3
Amplifier Rangefinder
4811TS JY00
Test Equipment Electronic,not otherwise included
Includes:
Mk 346 Mod 1
Computer Test Set
Mk 3 Mod 8
Dummy Director
Oscilloscope
Voltmeter
Mk 6 Mod 5
Error Recorder
48118S
Stabilizer-Gyro
Includes:
Mk 16 Mod 2 Stable Element
Mk 156 Mod 2
Control Panel
Mk 36 Mod 2
Rate Transmitter
481217
Connector
Includes:
Contact Maker Firing Receptacle
48128Z
Switch-Firing Control
Includes:
Director Firing Key
R-17A Contact Maker
48130I
Oscillator, Signal
Includes:
1500-600 hz Cease Firing Signal Generator
48132B
Terminal Box
48138Z
Switch Box, Lever Operated
Includes:
S-2JRM3-22L
S-2JRM3-2
48148Z
Switch, Box, Lever Operated
Includes:
S-2JRM3-22L
FF-1052 Class
Prepared 9-10-76


400
Command and Surveillance
480
Fire Control Systems
482
Fire Control Systems (Non-SONAR Data Base)
4821
Target Designation Circuit "PD"
4822
Basic Point Defense Surface Missile
Note: Mk 115 Mod Ø system is installed in hulls FF-1052 through FF-1083 (less FF-1070).
4823
BPDSMS Salvo Warning Circuit "G-13VB"
48210D
Indicator Group
Includes:
Mk 5 Mod 29
Indicator Panel
Mk 7 Mod 4
Range and Bearing Indicator
Indicator Lamps
48210N
Interconnecting Groups
Includes:
AN/SPA-50 Synchros
CV-2884/SPA-4
Differential Generator (Bearing)
Generator (Range)
Synchro Capacitor
48215G
Gyro Compass Equipment Amplifier-Synchro Signal
Includes:
Synchro Amplifier, Type E
48218Z
Switches, General
Includes:
Foot Operated S-2JR25-3A
4822CV
Converter-Target Designation
Includes:
Mk 67 Mod Ø
4822CO
Fire Control Panel
Includes:
Mk 285 Mod Ø
4822ID
Indicators
Includes:
Mk 115 Mod Ø Visual
Mk 1 Mod 2 Horizon
4822JD
Junction Box
Includes:
Mk 50 Mod Ø
G-PDIA
Synchro Generator (locked Rotor)
4822OY
Radar System
Includes:
Mk 66 Mod Ø
Transmitter
Mk 19 Mod Ø
Receiver
Mk 33 Mod Ø
Antenna
Mk 151 Mod Ø
Computer, Power Supply
4822SM
Simulator-Radar Target
Includes:
Mk 34 Mod Ø
4822UH
Guided Missile Director Mk 76 Mod Ø
Includes:
Mk 30 Mod Ø
Optical Sight
Mk 3 Mod Ø
Pedestal
4823A1
Signal, Audible
Includes:
Bell
Siren
Buzzer
4823LE
Light Indicator
Includes:
2815.1
48232B
Terminal Box
48238Z
Switches, General
Includes:
1SR2A4-4
S2JRM3-2
S2JRM3-22L
2JR15-3A
FF-1052 Class
Prepared 9-10-76

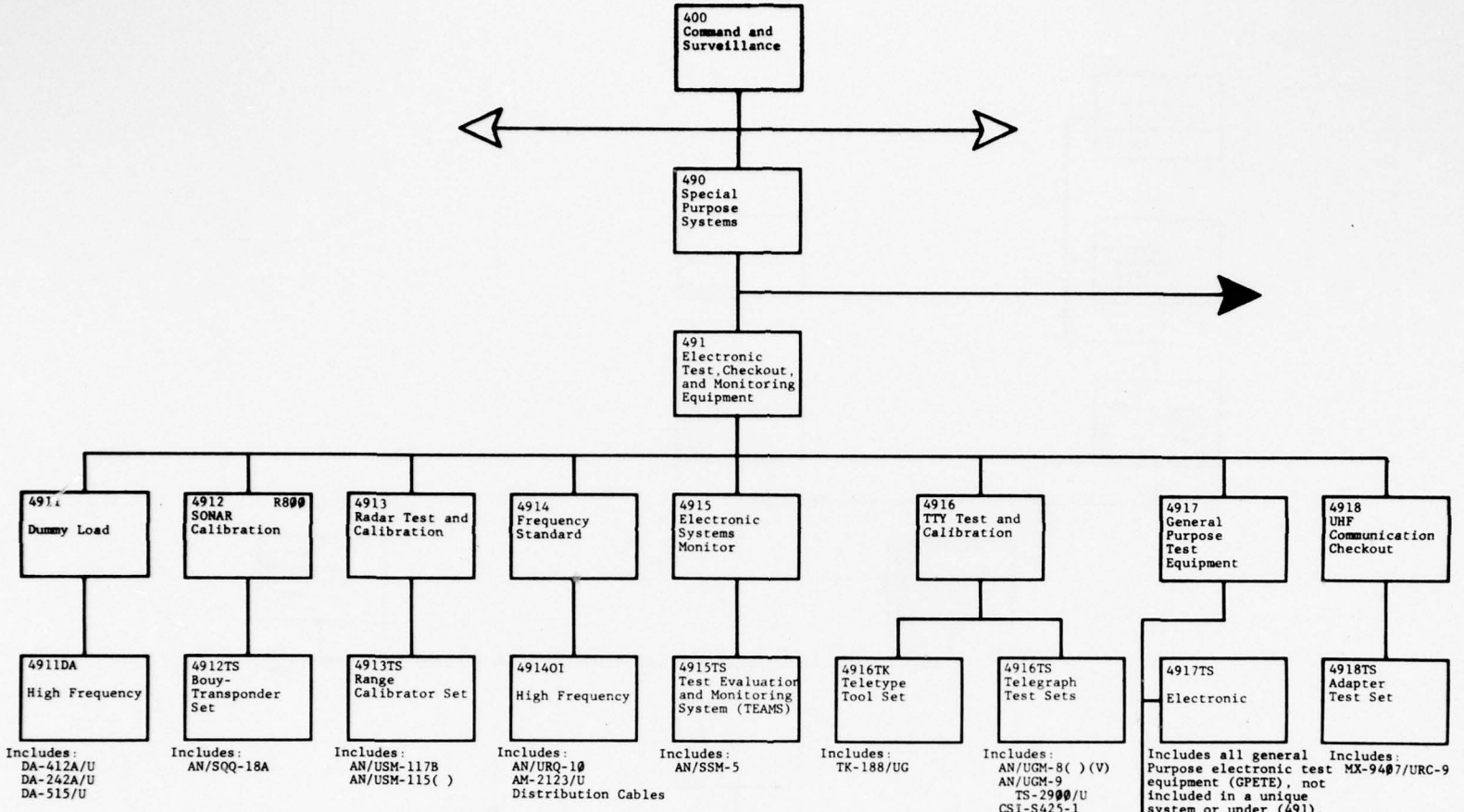

400
Command and Surveillance
480
Fire Control Systems
483
Fire Control System (SONAR Data Base)
4831 JP00
Underwater Battery-Circuit "GR"
Includes Interconnecting Cabling.
Note: Mk 114 Mod 14 system installed in the class.
4832 JY00 JJ00
ASROC Control System Circuit "GW"
4833
ASROC System Firing Circuit "9PA"
4831AM
Transmitter-Relay
Includes:
Mk 44 Mod 1
4831A1
Signal, Alert
Includes:
IC/Z1SA Buzzer
4831ID
Indicators
Includes:
Mk 78 Mod 2
Mk 21 Mod 2
4831LE
Light Indicator
Includes:
B-41A (Modified), 1 Dial
B-45A, 4 Dial
48310J
Console-Attack
Includes:
Mk 53 Mod 0
483103
Control Indicator Assembly, UB
Includes:
ASW Control
25342-001
48318Z
Switch-Selector
Includes:
Foot Switch
1SR3A4-2 TPST SBM
4832AM
Transmitter-Relay
Includes:
Mk 12 Mod 0
Switch Box
Mk 43 Mod 0
4832CO JJ66
Control Panel
Includes:
Mk 199 Mod 3D
Launcher Captains
4832LE
Light Indicators
Includes:
B-41A (Modified) 2 Dial
B-46A
4832SM JJ69
Simulator (Dummy Director)
Includes:
Mk 6 Mod 2
Mk 22 Mod 0
4832TS JY00
Test Devices
Includes:
Mk 363 Mod 1 or 3
Portable Missile Electrical System Test set
Mk 357 Mod 0 or 1
Portable Test Set
Mk 12 Mod 0 & 1
Error Recorder
4833LE
Light Indicator
Includes:
2815.1
2818.1
48331F
Fuse Unit Assembly
Includes:
C24B
48332B
Terminal Box
Includes:
2-4TB20M-2
48338Z
Switch-Rotary
Includes:
S2JRM3-22L
FF-1052 Class
Prepared 9-10-76



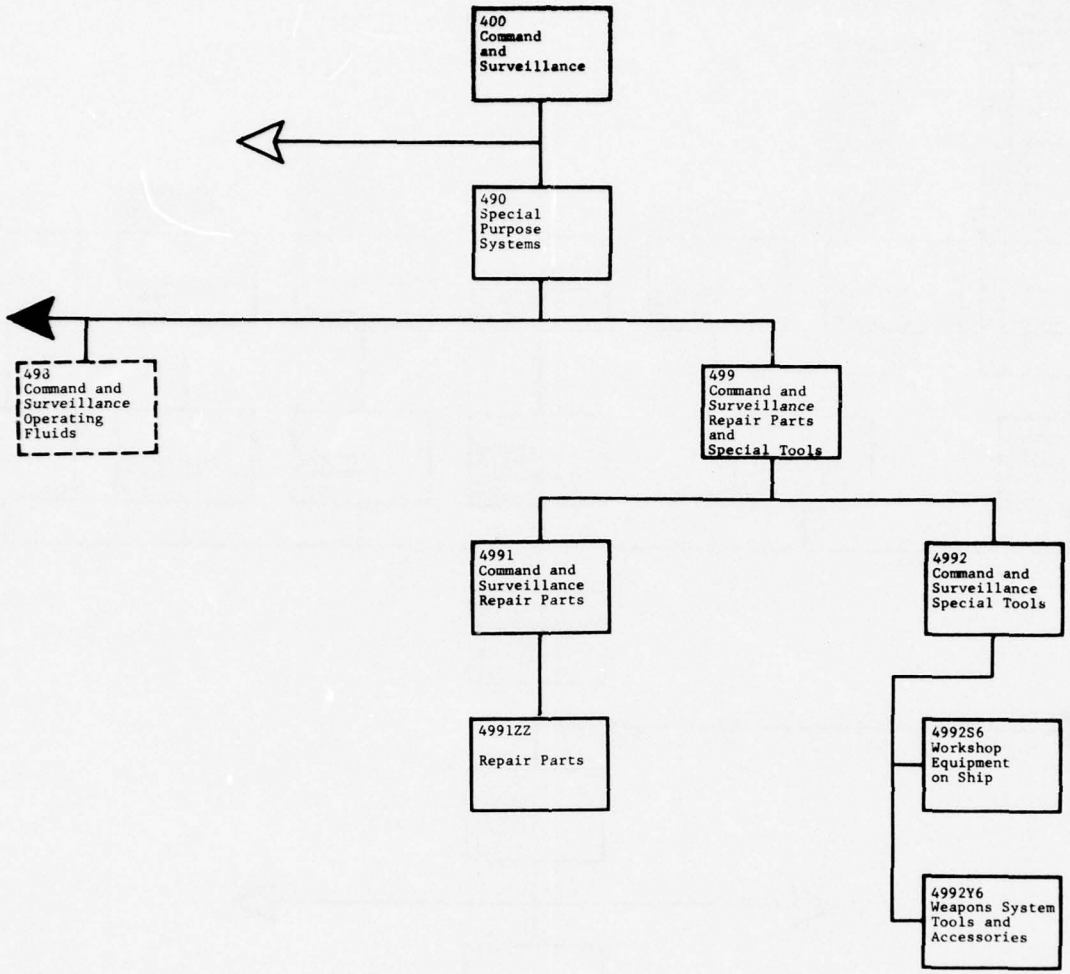
FF-1052 Class
Prepared 9-10-76

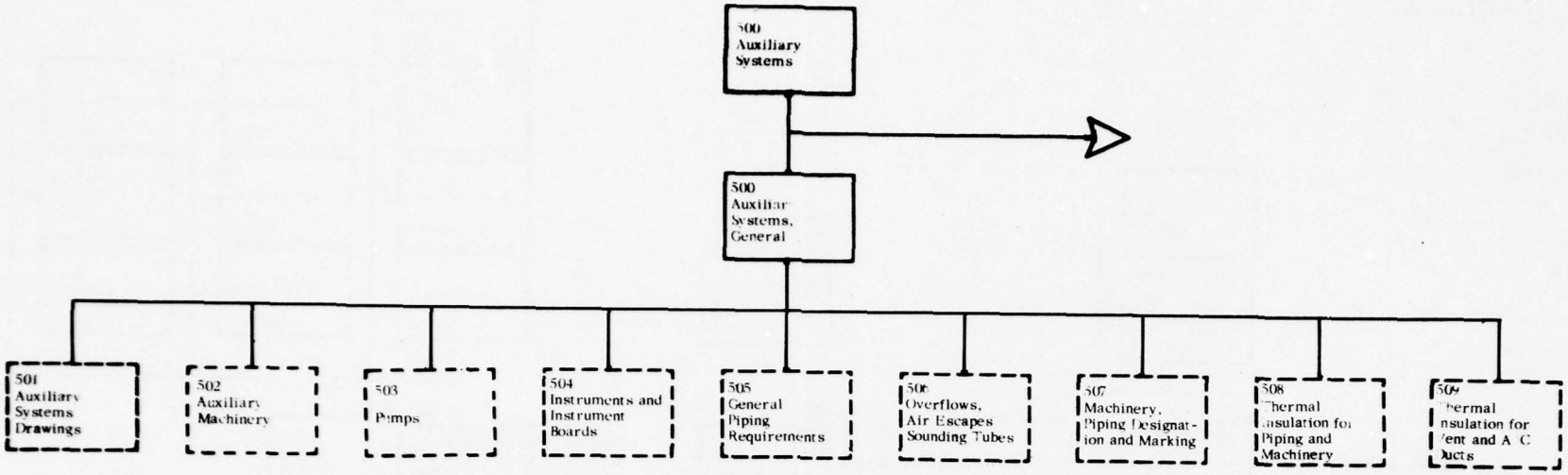


FF-1052 Class
Prepared 9-10-76

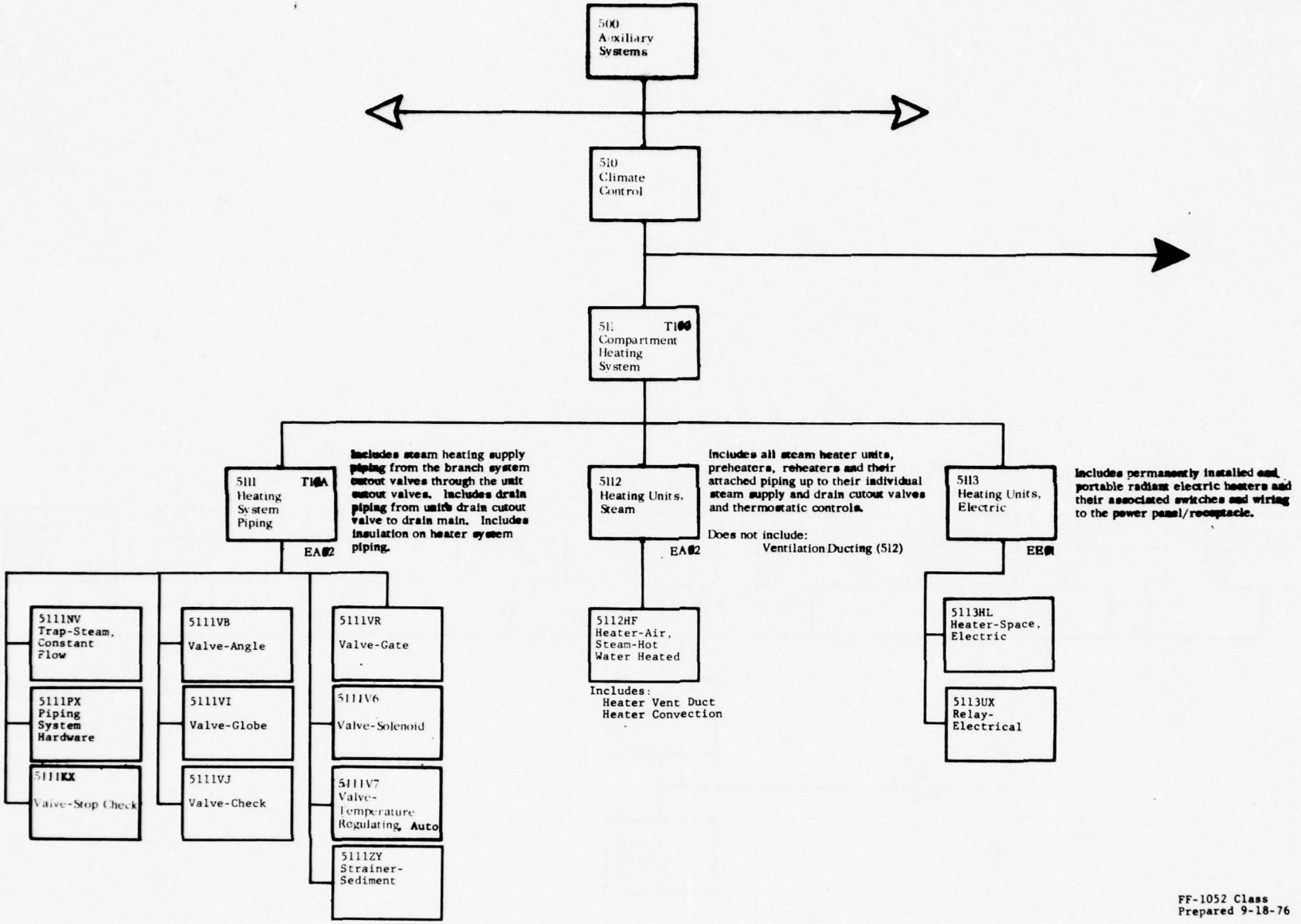


FF-1052 Class
Prepared 9-10-76

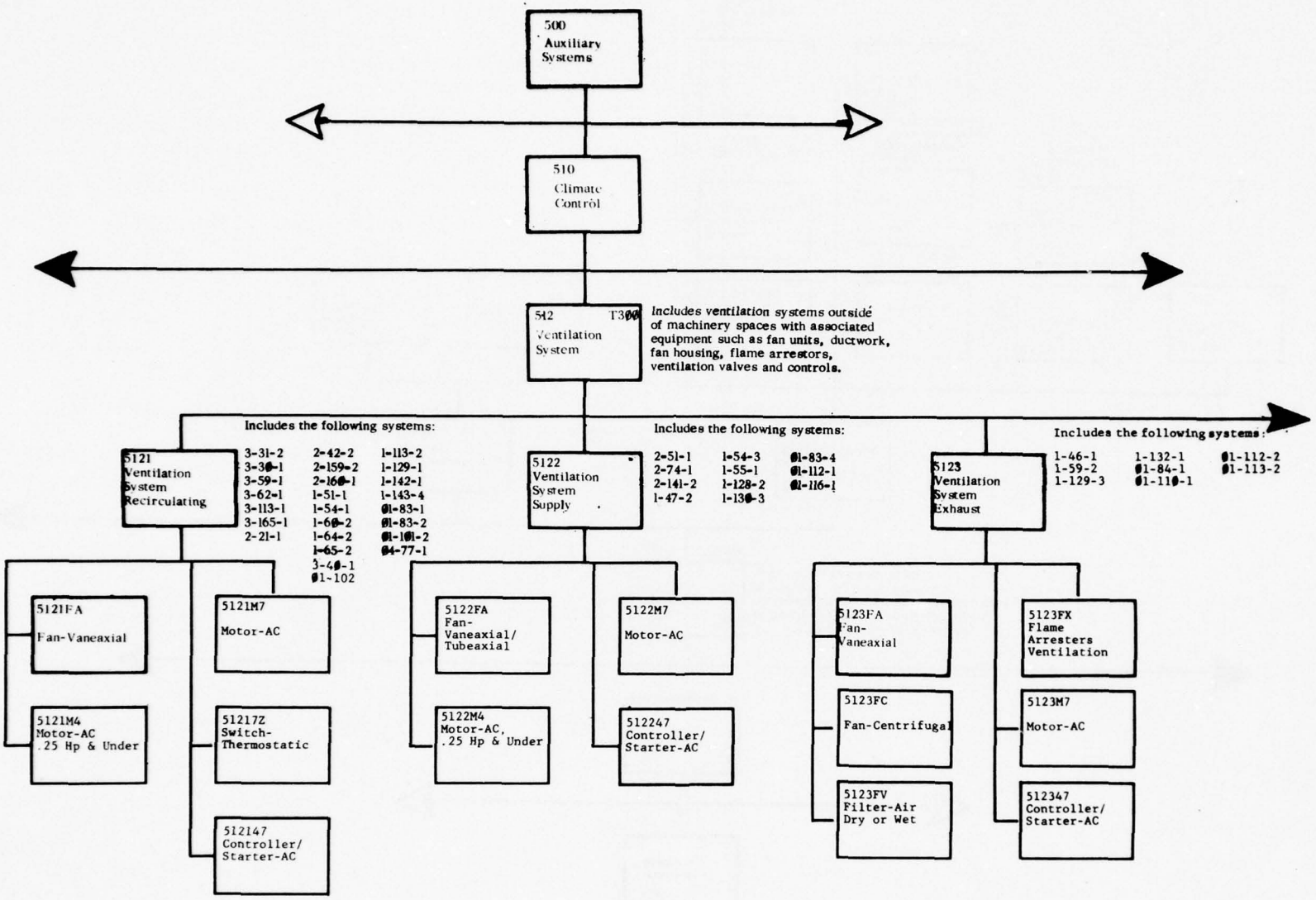

400
Command
and
Surveillance
490
Special
Purpose
Systems
493
Command and
Surveillance
Operating
Fluids
499
Command and
Surveillance
Repair Parts
and
Special Tools
4991
Command and
Surveillance
Repair Parts
4992
Command and
Surveillance
Special Tools
4991ZZ
Repair Parts
4992S6
Workshop
Equipment
on Ship
4992Y6
Weapons System
Tools and
Accessories



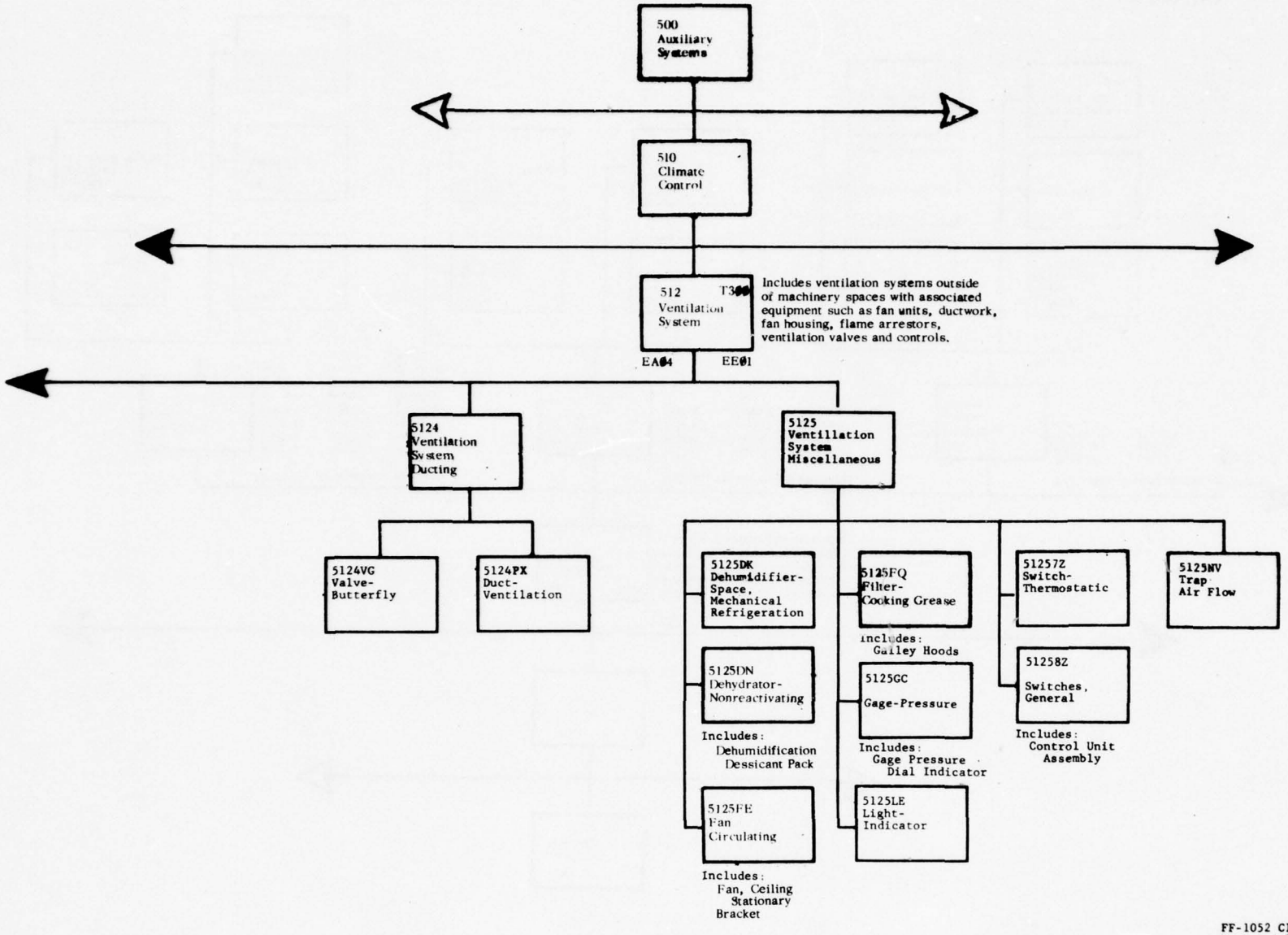
FF-1052 Class
Prepared 9-18-76



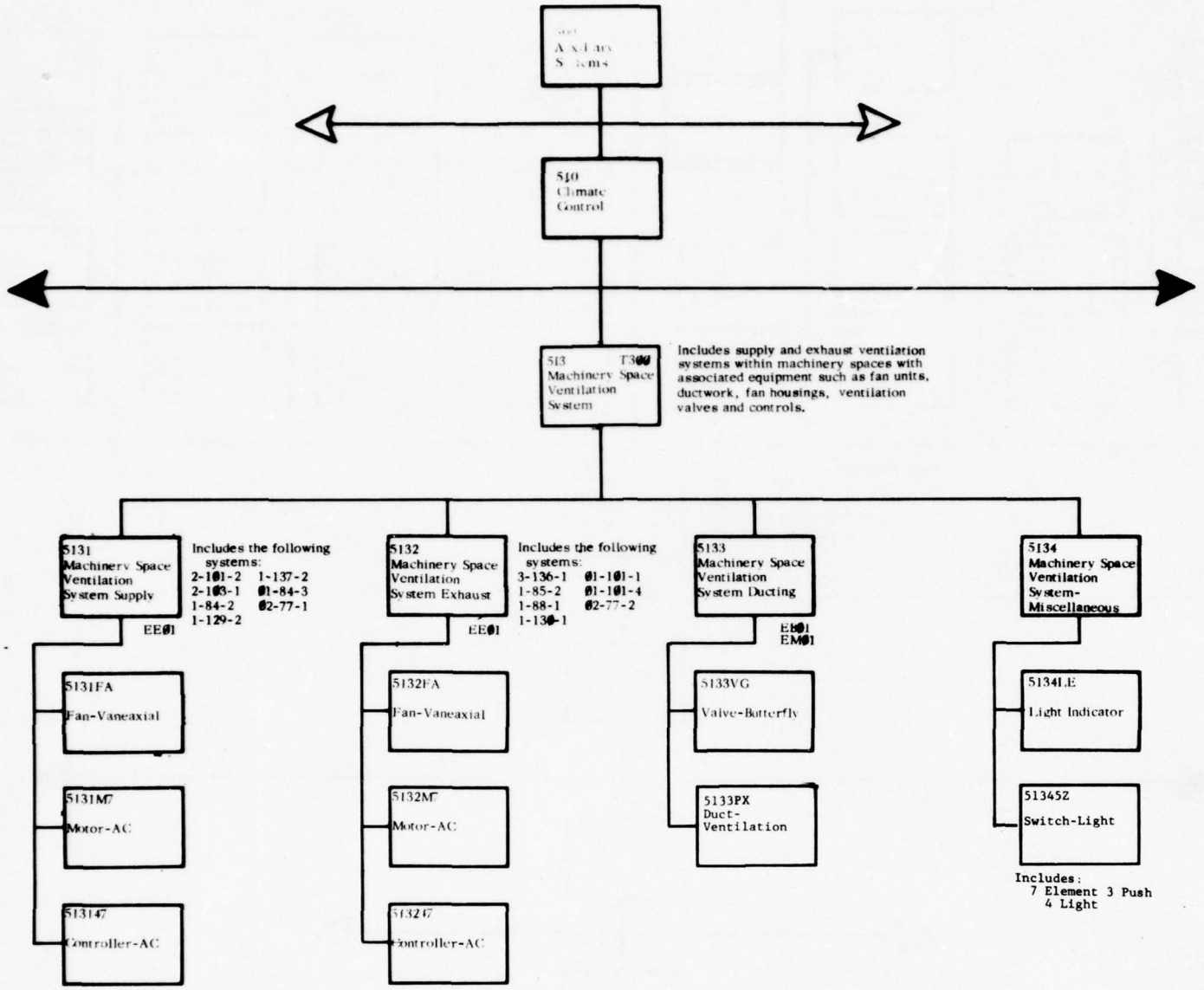
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Prepared 9-18-76



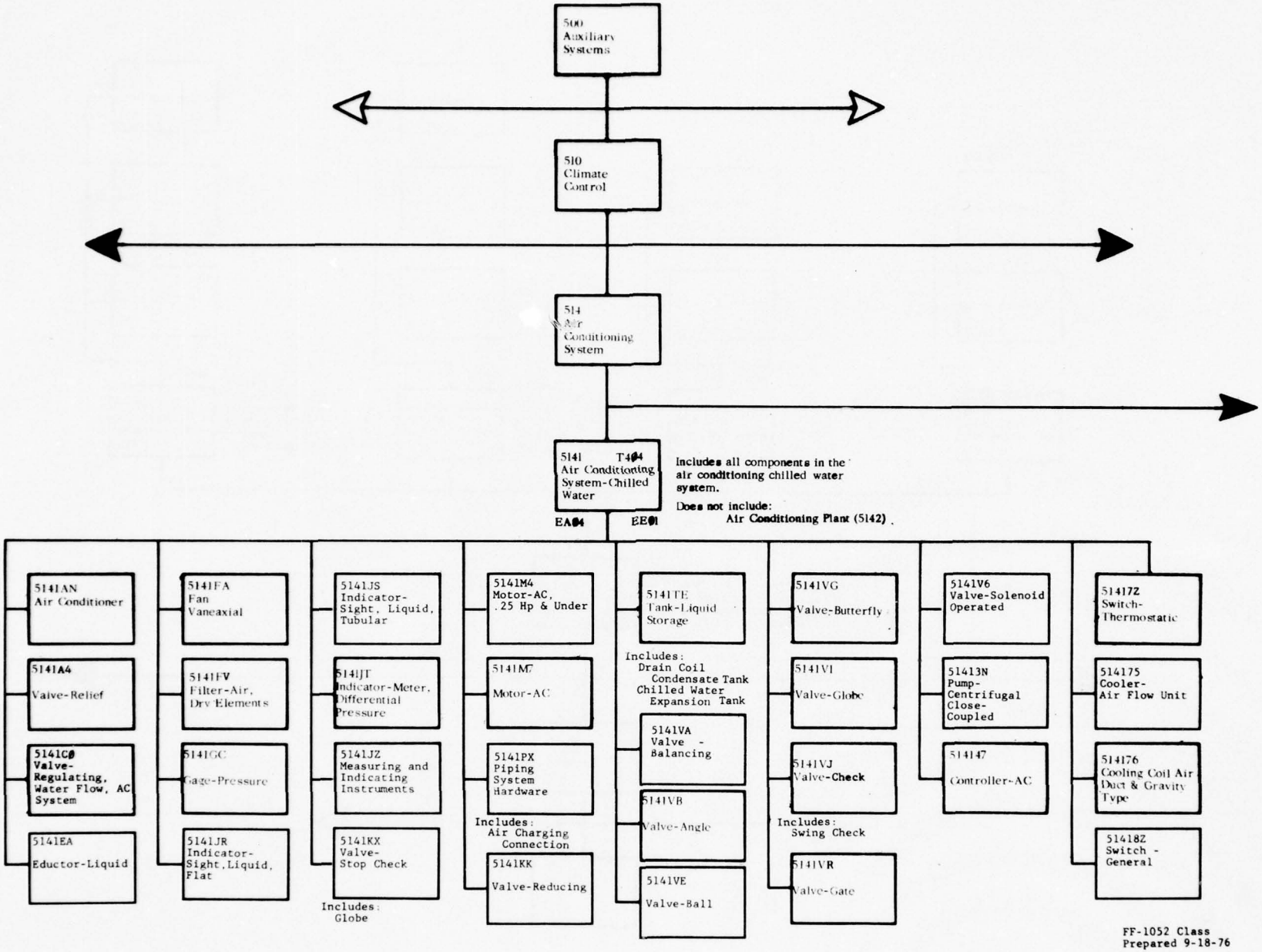
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Prepared 9-18-76

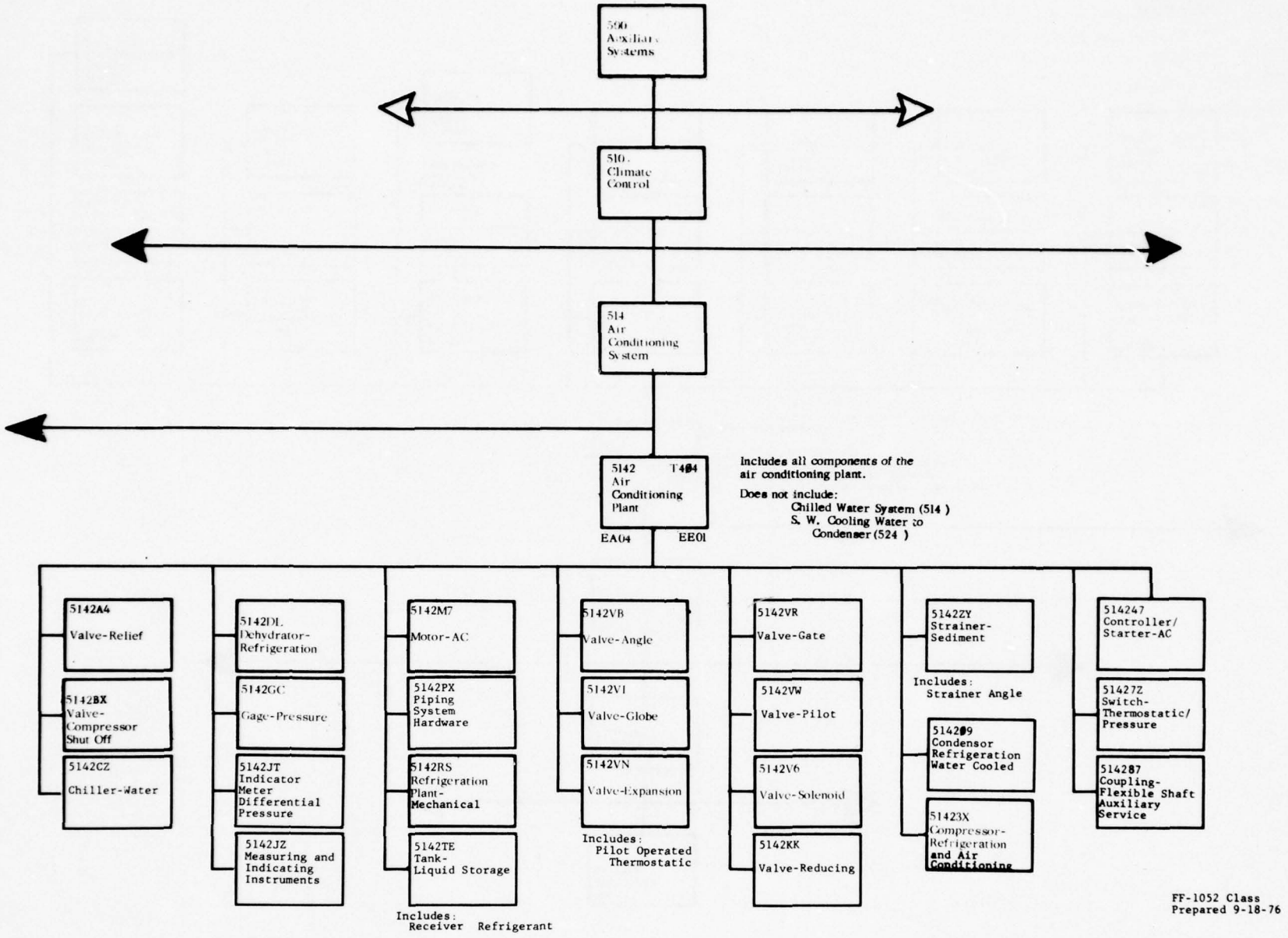


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Prepared 9-18-76

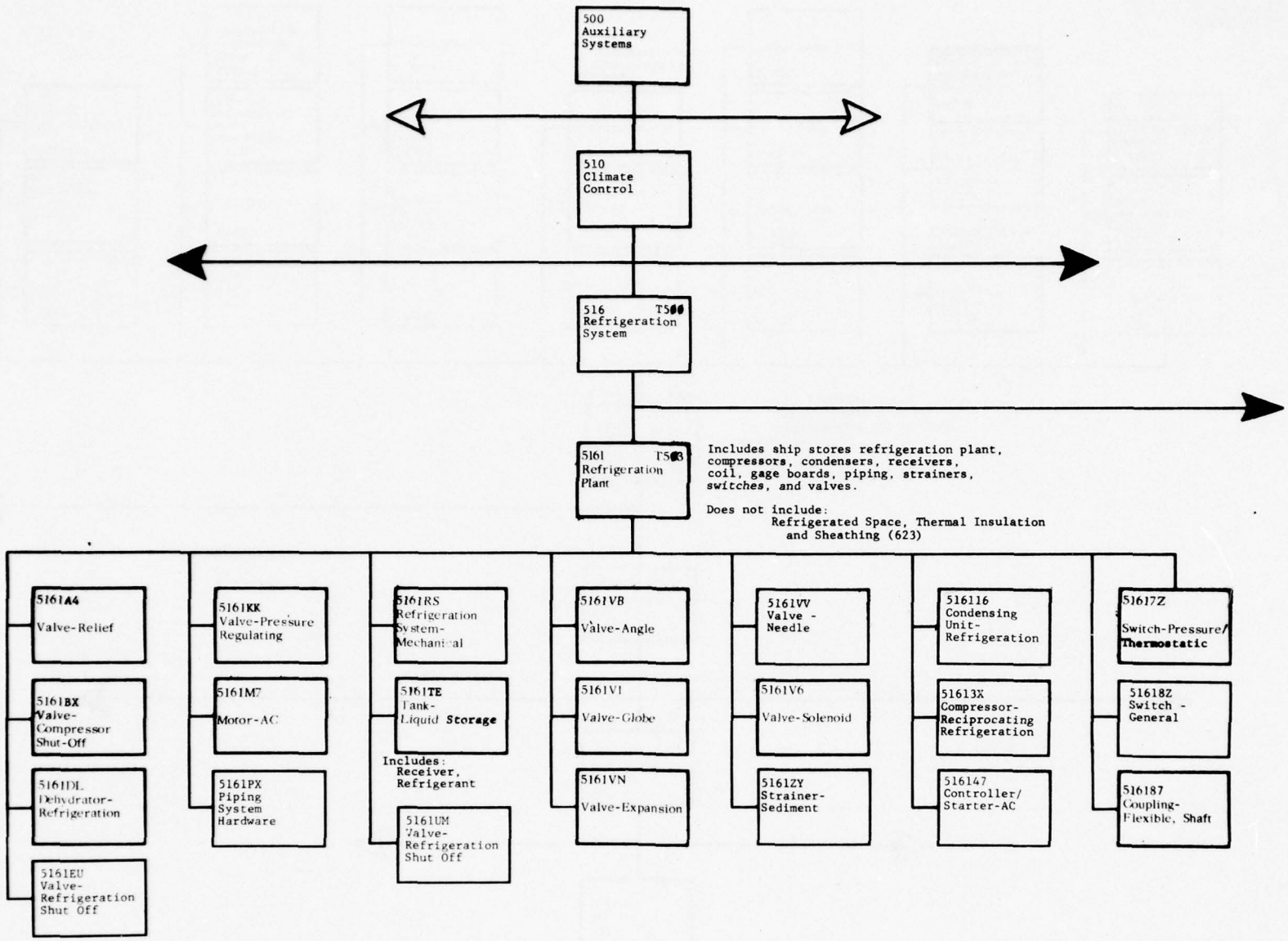


FF-1052 Class
Prepared 9-18-76

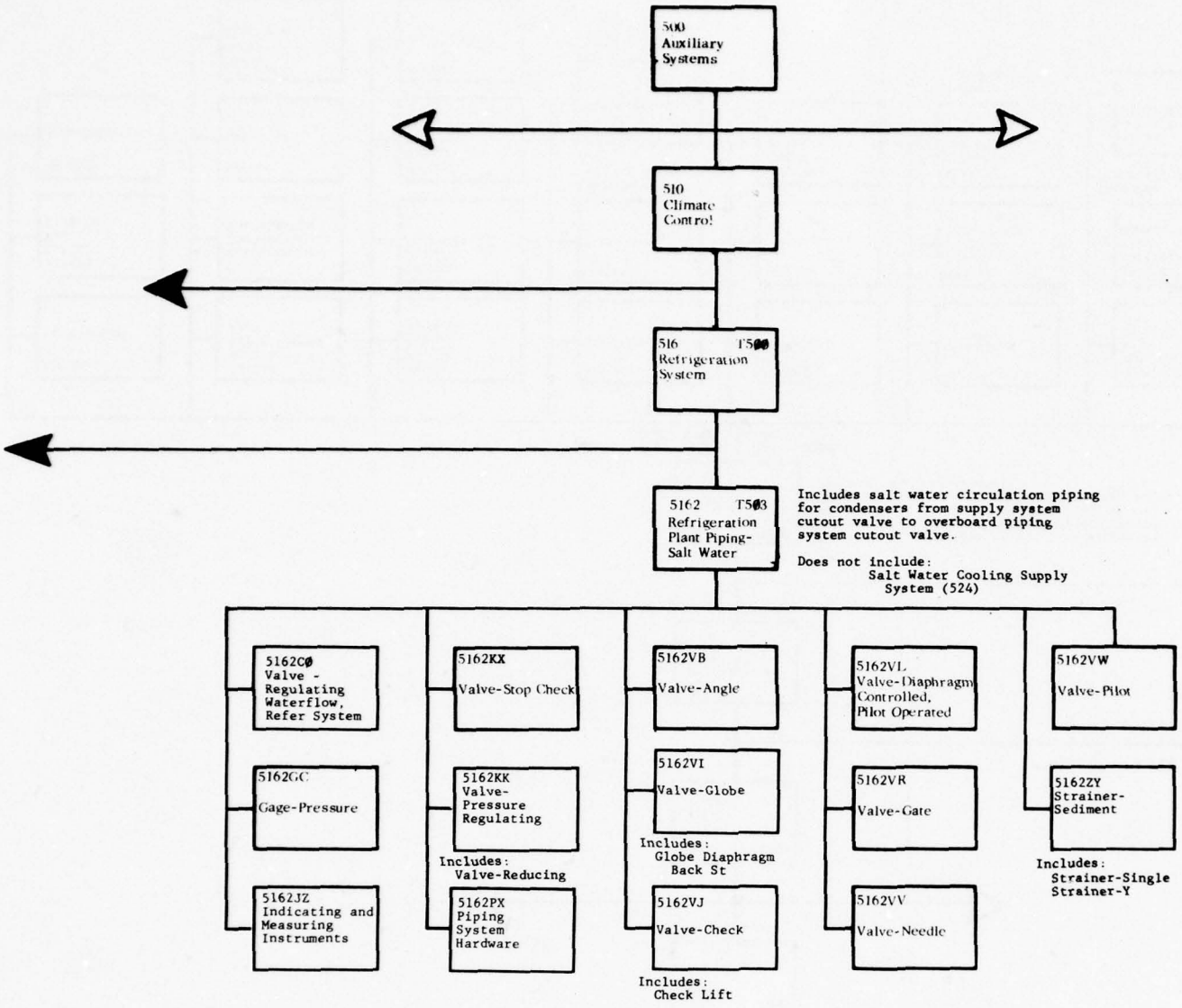

500
Auxiliary Systems
510
Climate Control
514
Air Conditioning System
5141 T4Ø4
Air Conditioning System-Chilled Water
EAØ4
EEØ1
Includes all components in the air conditioning chilled water system.
Does not include:
Air Conditioning Plant (5142).
5141AN
Air Conditioner
5141A4
Valve-Relief
5141CØ
Valve-Regulating, Water Flow, AC System
5141EA
Eductor-Liquid
5141FA
Fan Vaneaxial
5141FV
Filter-Air, Dry Elements
5141GC
Gage-Pressure
5141JR
Indicator-Sight, Liquid, Flat
5141JS
Indicator-Sight, Liquid, Tubular
5141JT
Indicator-Meter, Differential Pressure
5141JZ
Measuring and Indicating Instruments
5141KX
Valve-Stop Check
Includes:
Globe
5141M4
Motor-AC, .25 Hp & Under
5141M7
Motor-AC
5141PX
Piping System Hardware
Includes:
Air Charging Connection
5141KK
Valve-Reducing
5141TE
Tank-Liquid Storage
Includes:
Drain Coil Condensate Tank
Chilled Water Expansion Tank
5141VA
Valve - Balancing
5141VB
Valve-Angle
5141VE
Valve-Ball
5141VG
Valve-Butterfly
5141VI
Valve-Globe
5141VJ
Valve-Check
Includes:
Swing Check
5141VR
Valve-Gate
5141V6
Valve-Solenoid Operated
51413N
Pump-Centrifugal Close-Coupled
514147
Controller-AC
51417Z
Switch-Thermostatic
514175
Cooler-Air Flow Unit
514176
Cooling Coil Air Duct & Gravity Type
51418Z
Switch - General
FF-1052 Class
Prepared 9-18-76



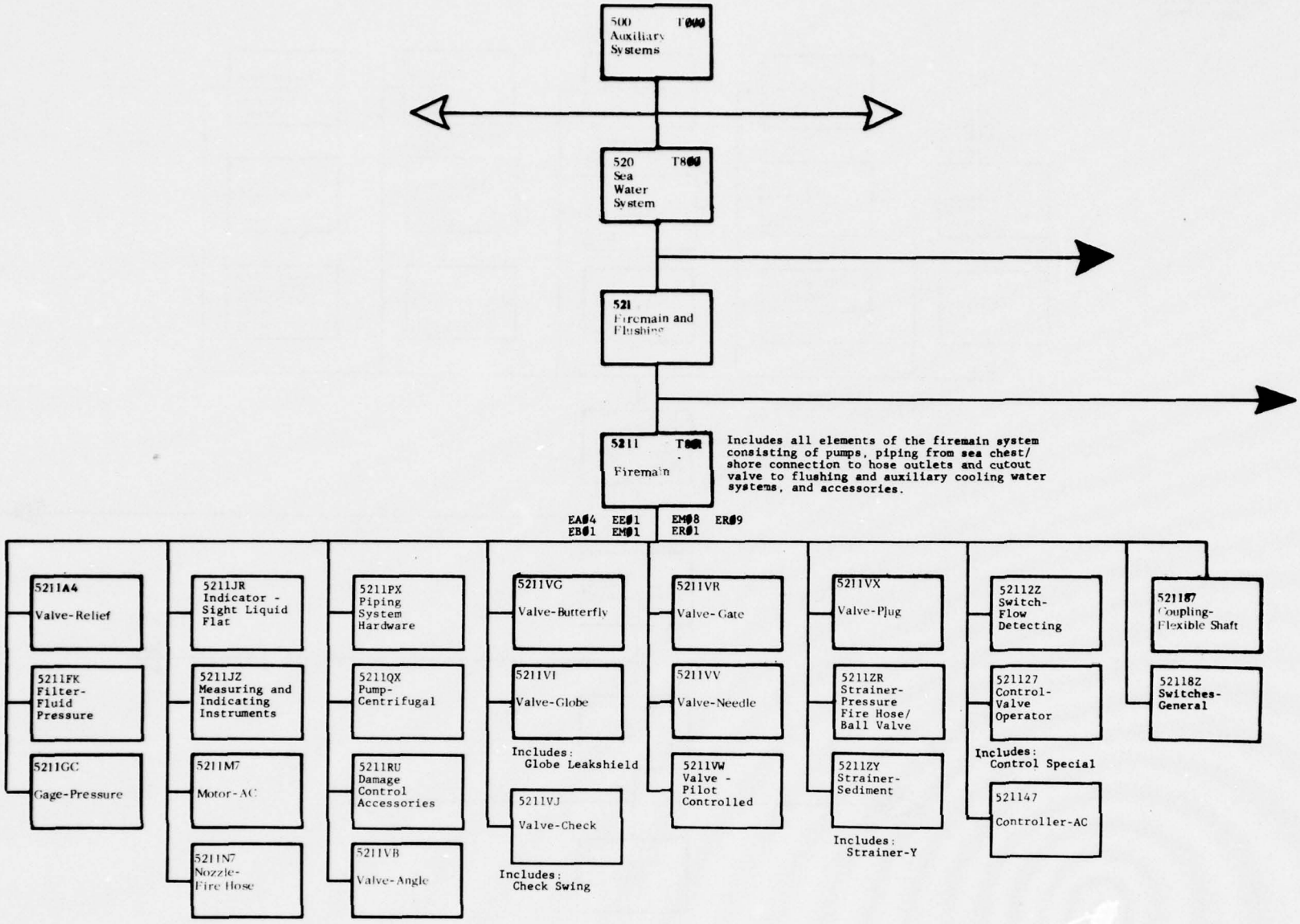
FF-1052 Class
Prepared 9-18-76



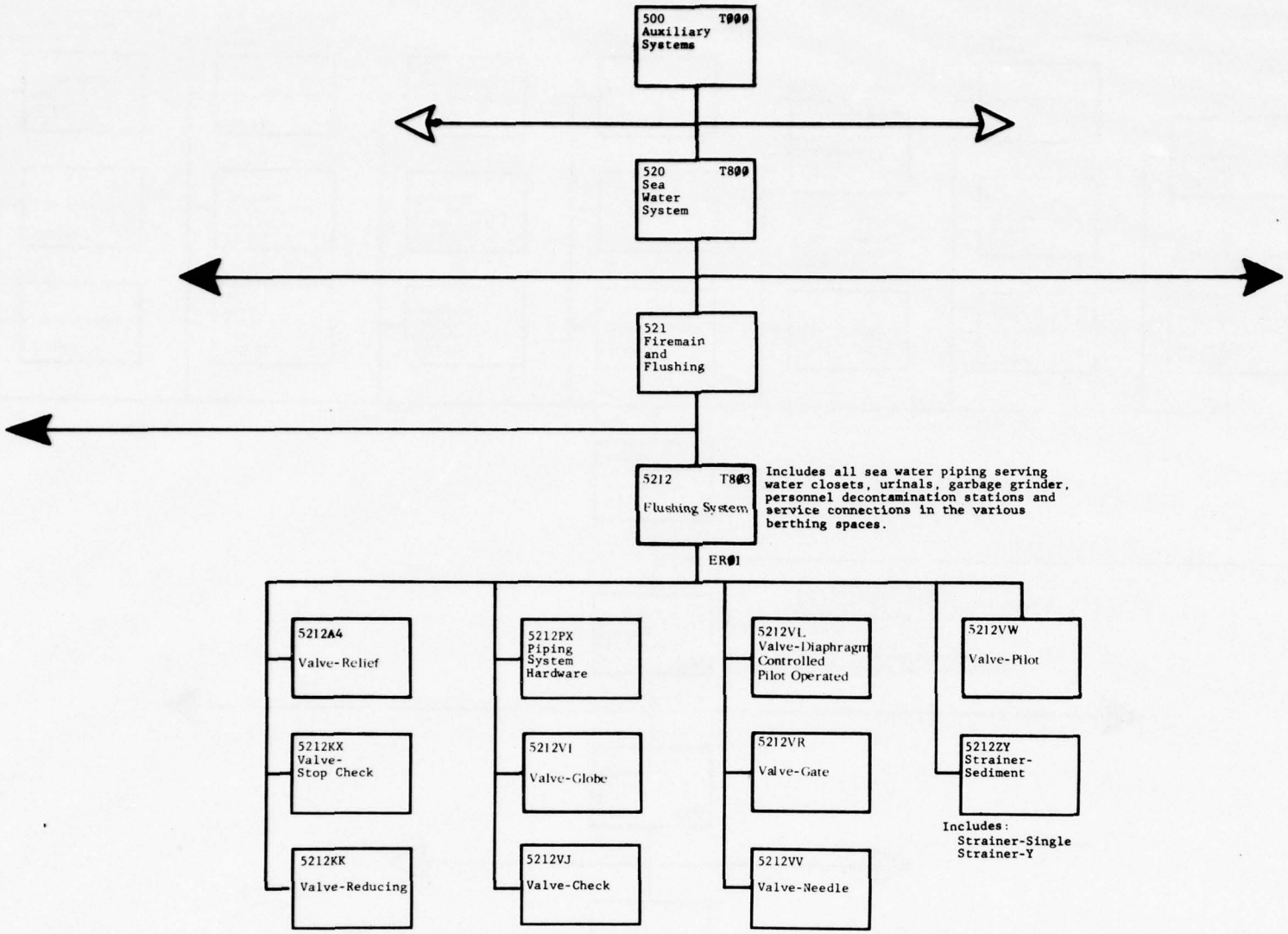
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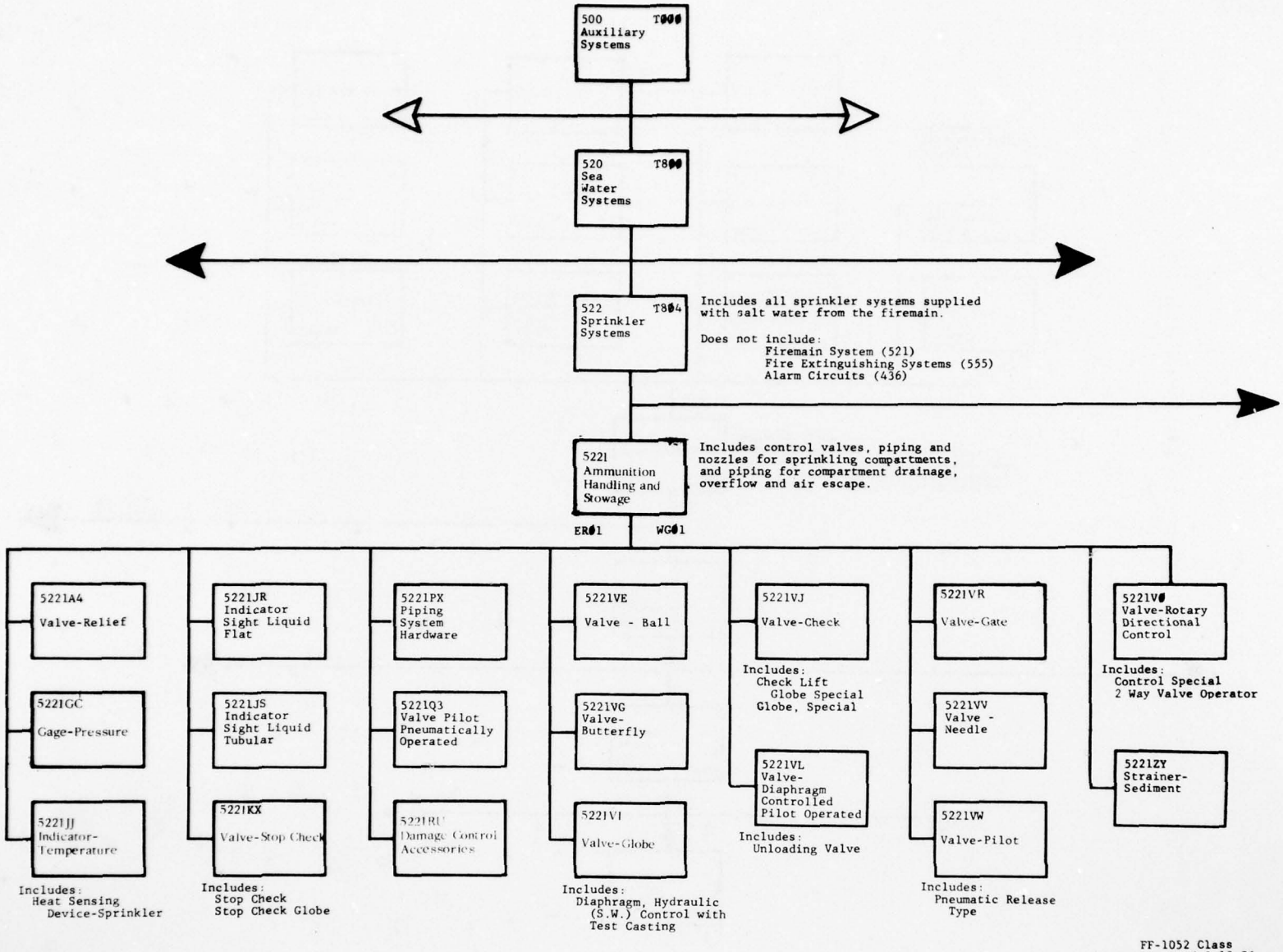
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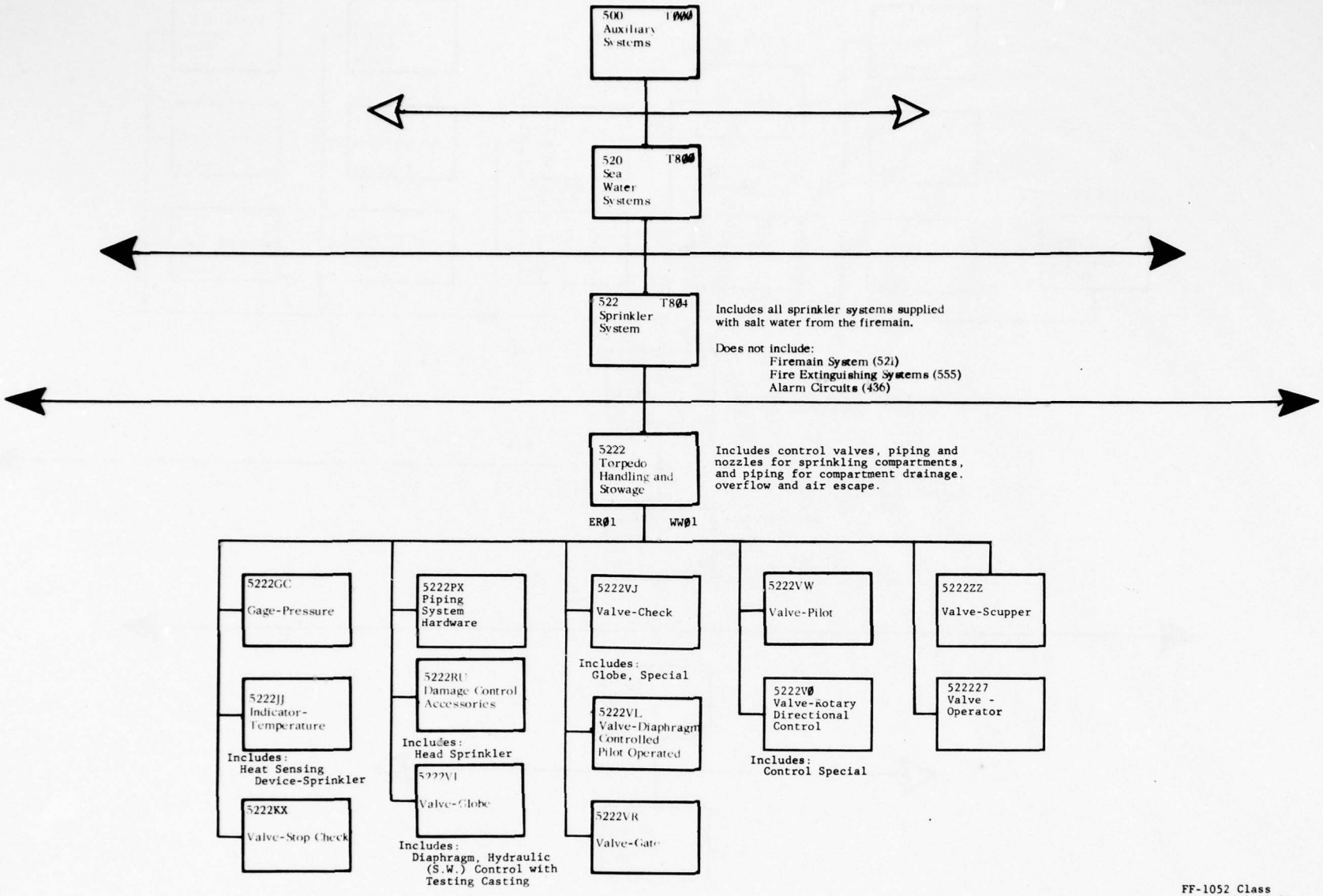
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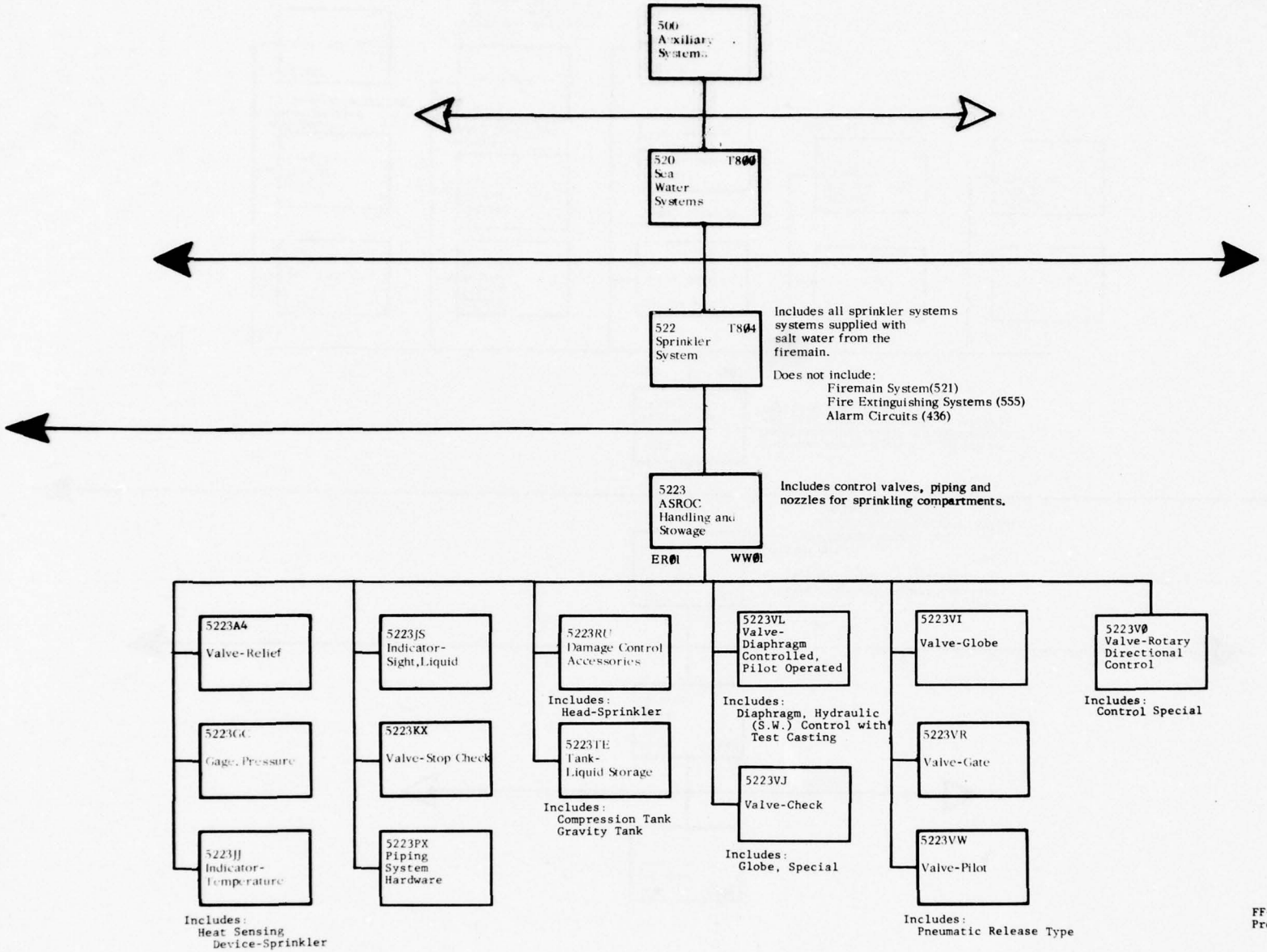
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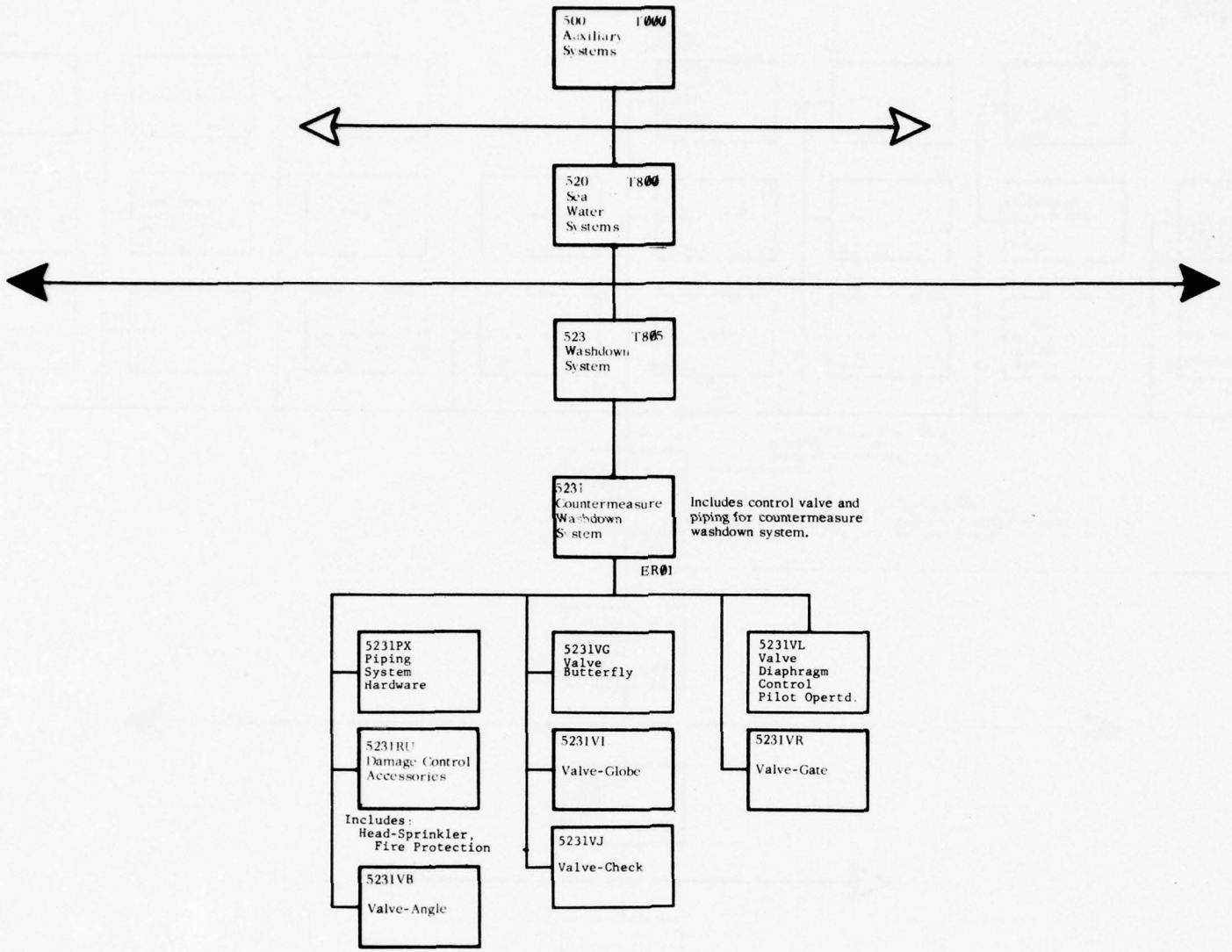
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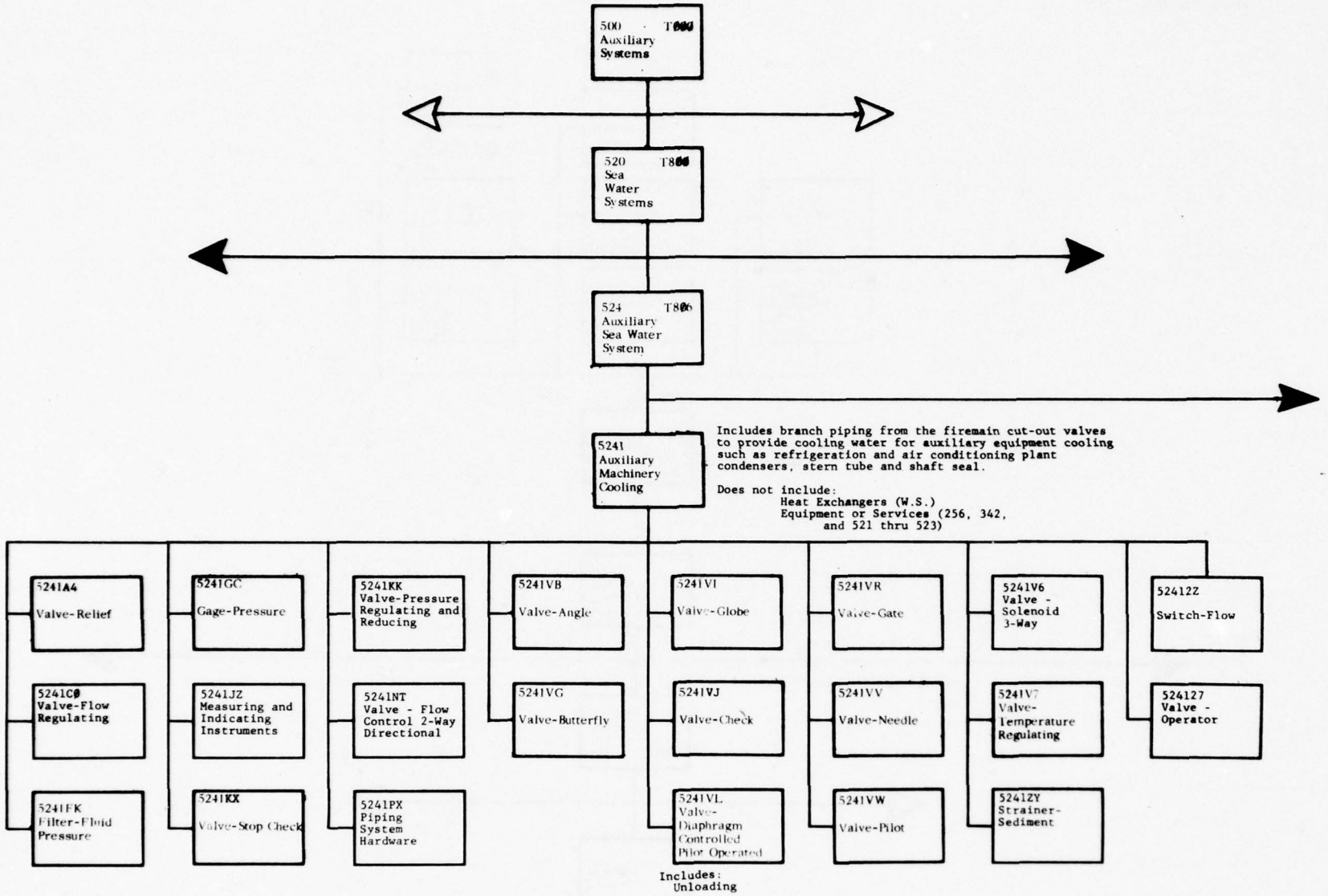
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Prepared 9-18-76



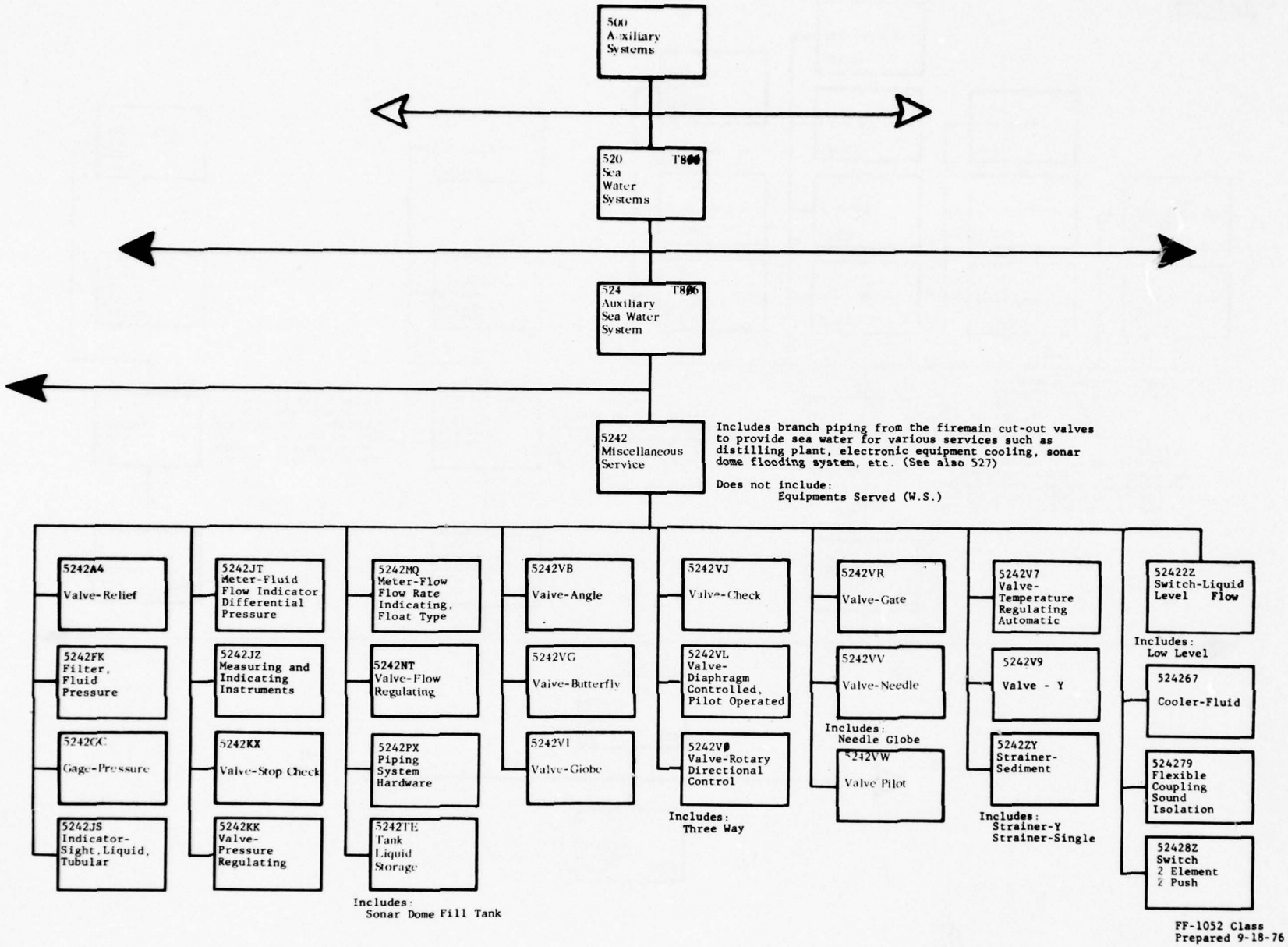
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Prepared 9-18-76



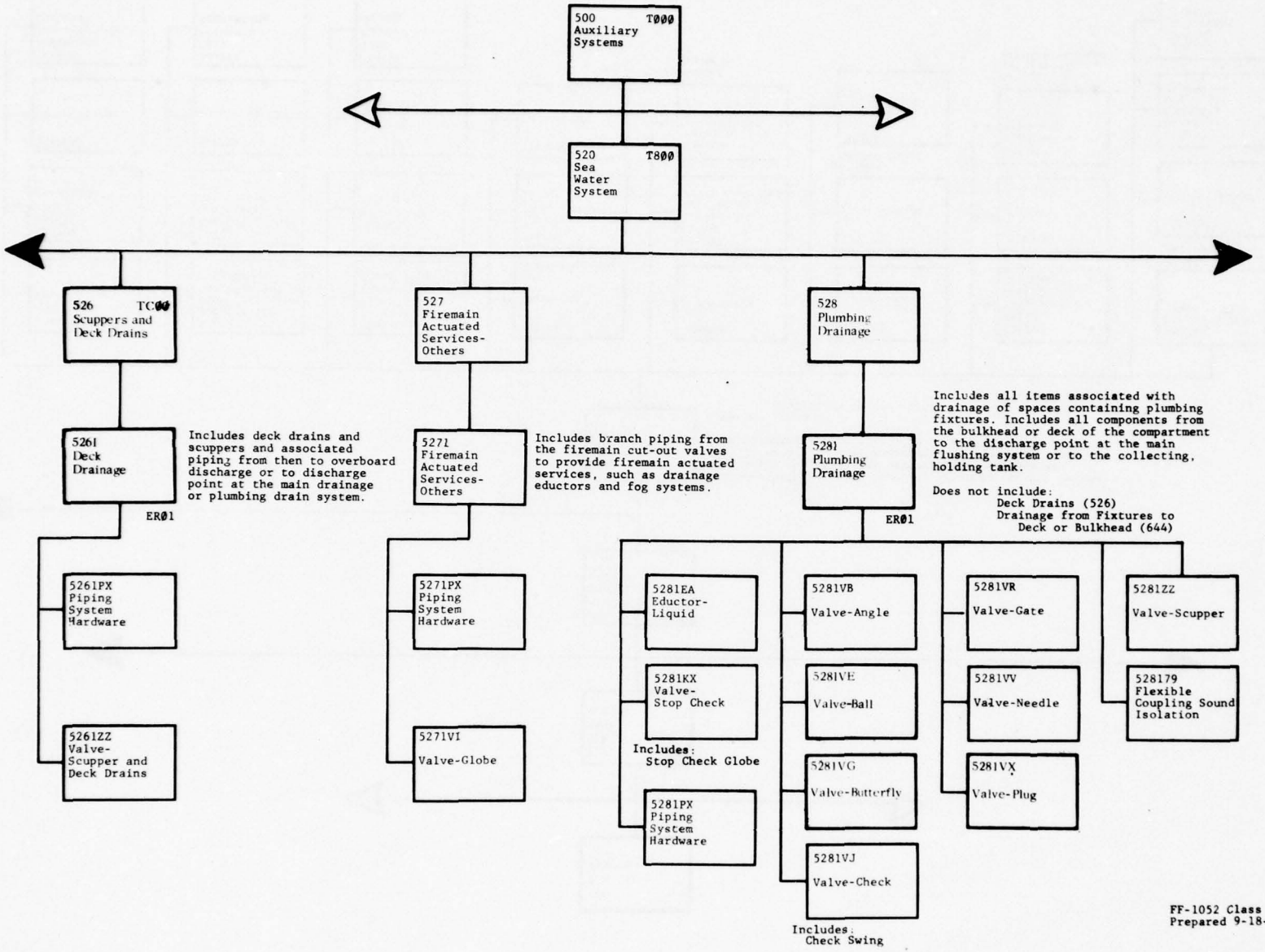
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Prepared 9-18-76

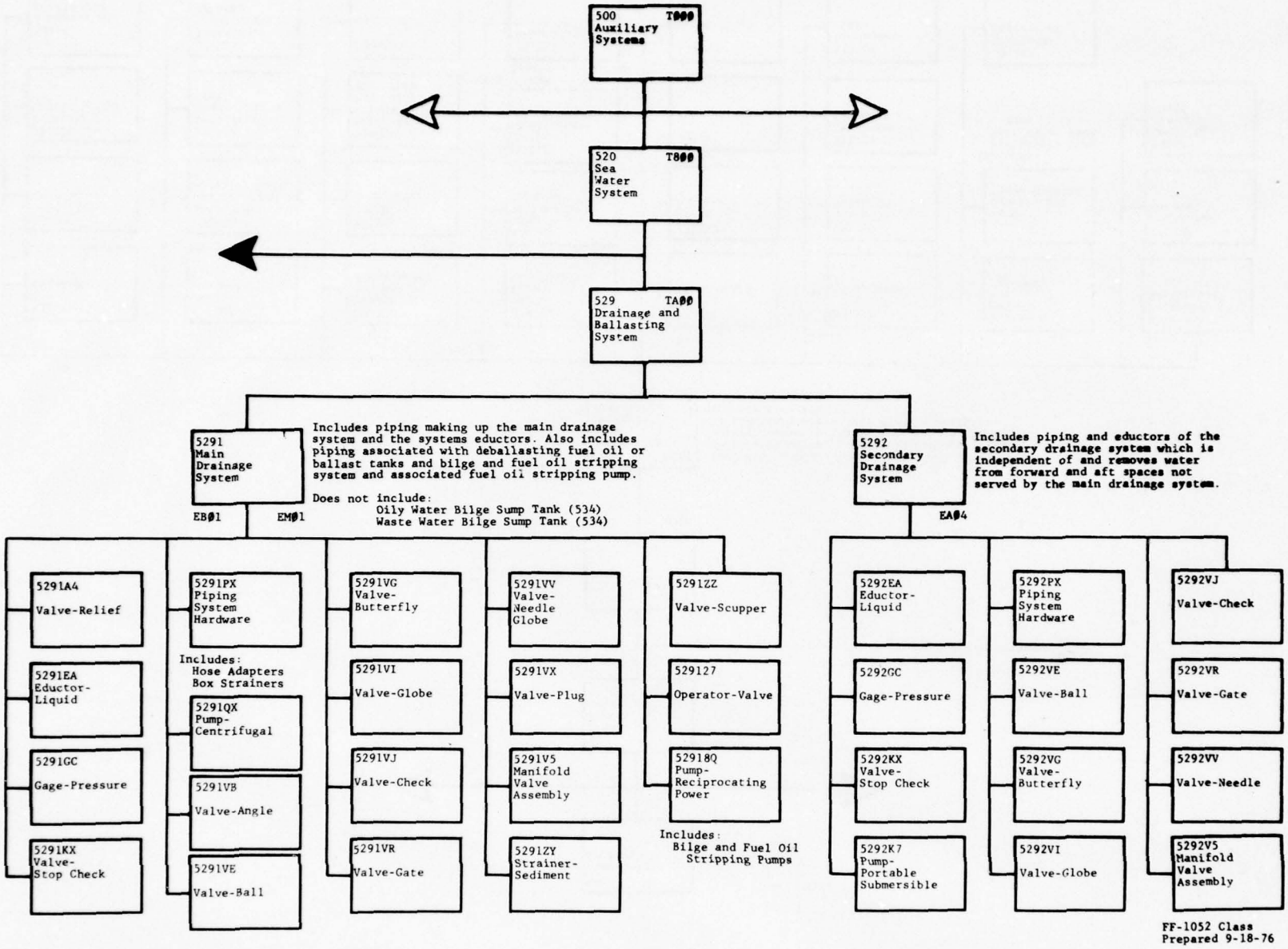


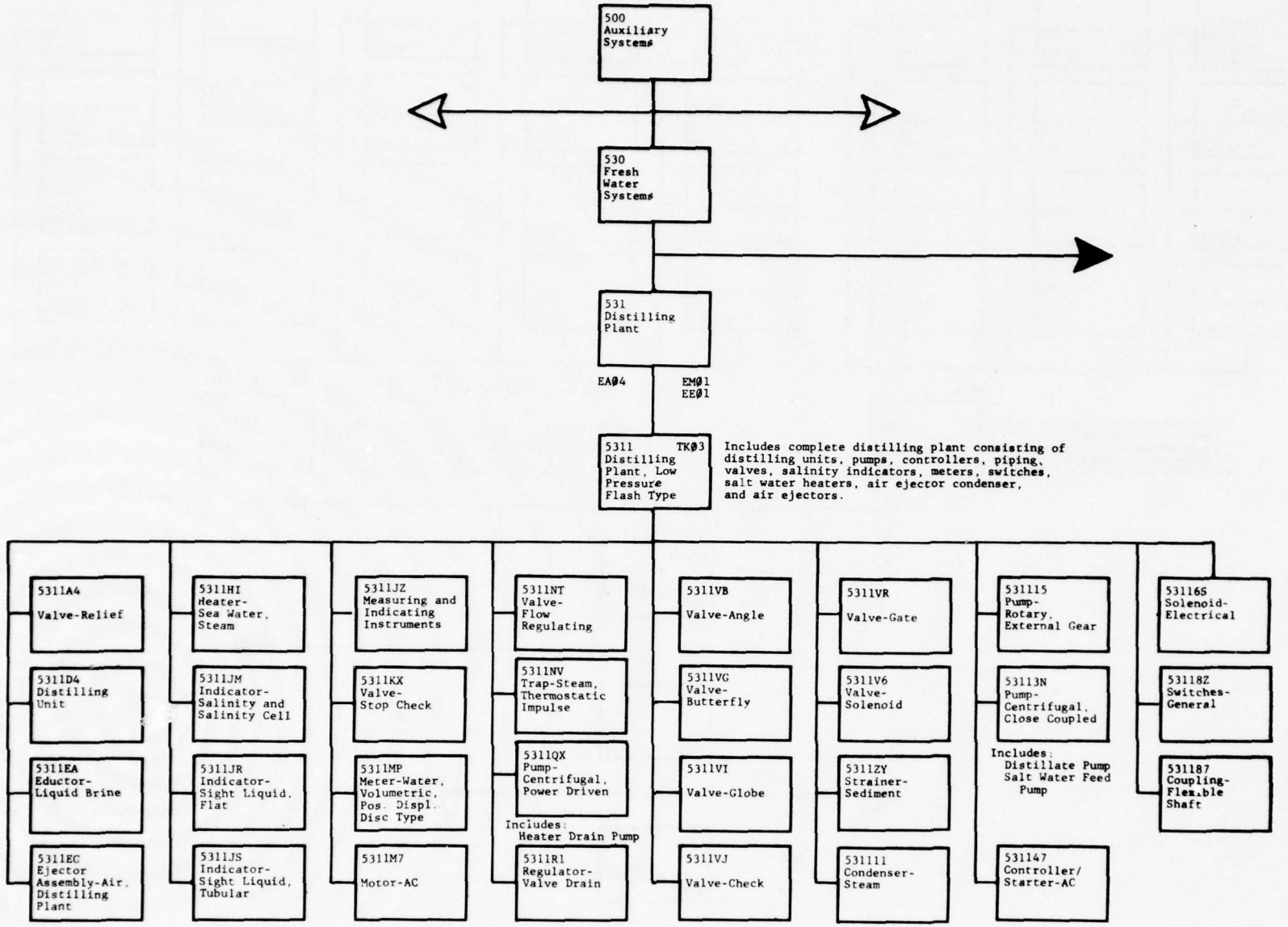
FF-1052 Class
Prepared 9-18-76



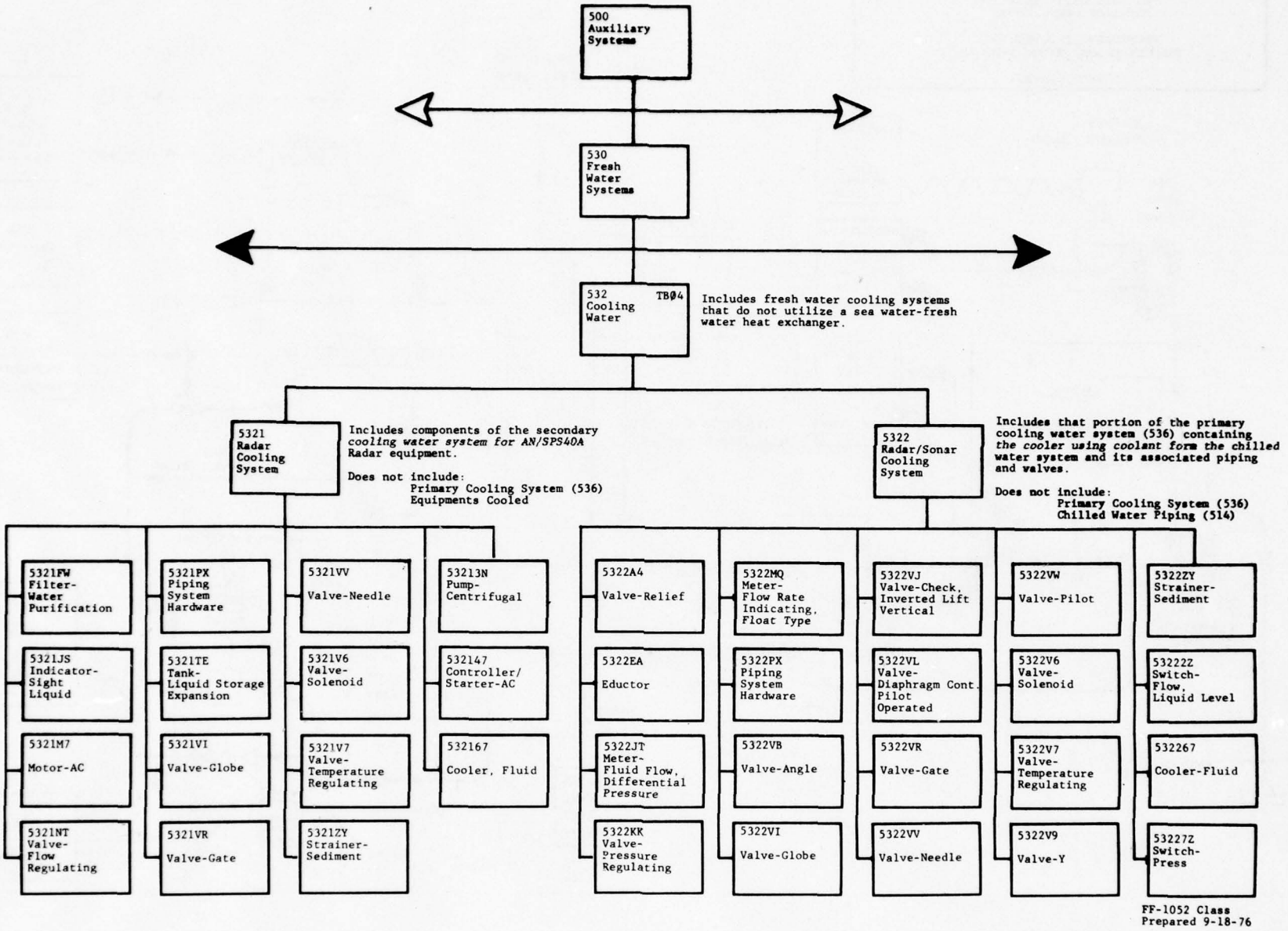
FF-1052 Class
Prepared 9-18-76


500 TØØØ
Auxiliary Systems
520 T8ØØ
Sea Water System
526 TCØØ
Scuppers and Deck Drains
527
Firemain Actuated Services-Others
528
Plumbing Drainage
5261
Deck Drainage
ERØ1
Includes deck drains and scuppers and associated piping from then to overboard discharge or to discharge point at the main drainage or plumbing drain system.
5271
Firemain Actuated Services-Others
Includes branch piping from the firemain cut-out valves to provide firemain actuated services, such as drainage eductors and fog systems.
5281
Plumbing Drainage
ERØ1
Includes all items associated with drainage of spaces containing plumbing fixtures. Includes all components from the bulkhead or deck of the compartment to the discharge point at the main flushing system or to the collecting, holding tank.
Does not include:
Deck Drains (526)
Drainage from Fixtures to Deck or Bulkhead (644)
5261PX
Piping System Hardware
5261ZZ
Valve-Scupper and Deck Drains
5271PX
Piping System Hardware
5271VI
Valve-Globe
5281EA
Eductor-Liquid
5281KX
Valve-Stop Check
Includes:
Stop Check Globe
5281PX
Piping System Hardware
5281VB
Valve-Angle
5281VE
Valve-Ball
5281VG
Valve-Butterfly
5281VJ
Valve-Check
Includes:
Check Swing
5281VR
Valve-Gate
5281VV
Valve-Needle
5281VX
Valve-Plug
5281ZZ
Valve-Scupper
528179
Flexible Coupling Sound Isolation
FF-1052 Class
Prepared 9-18-76

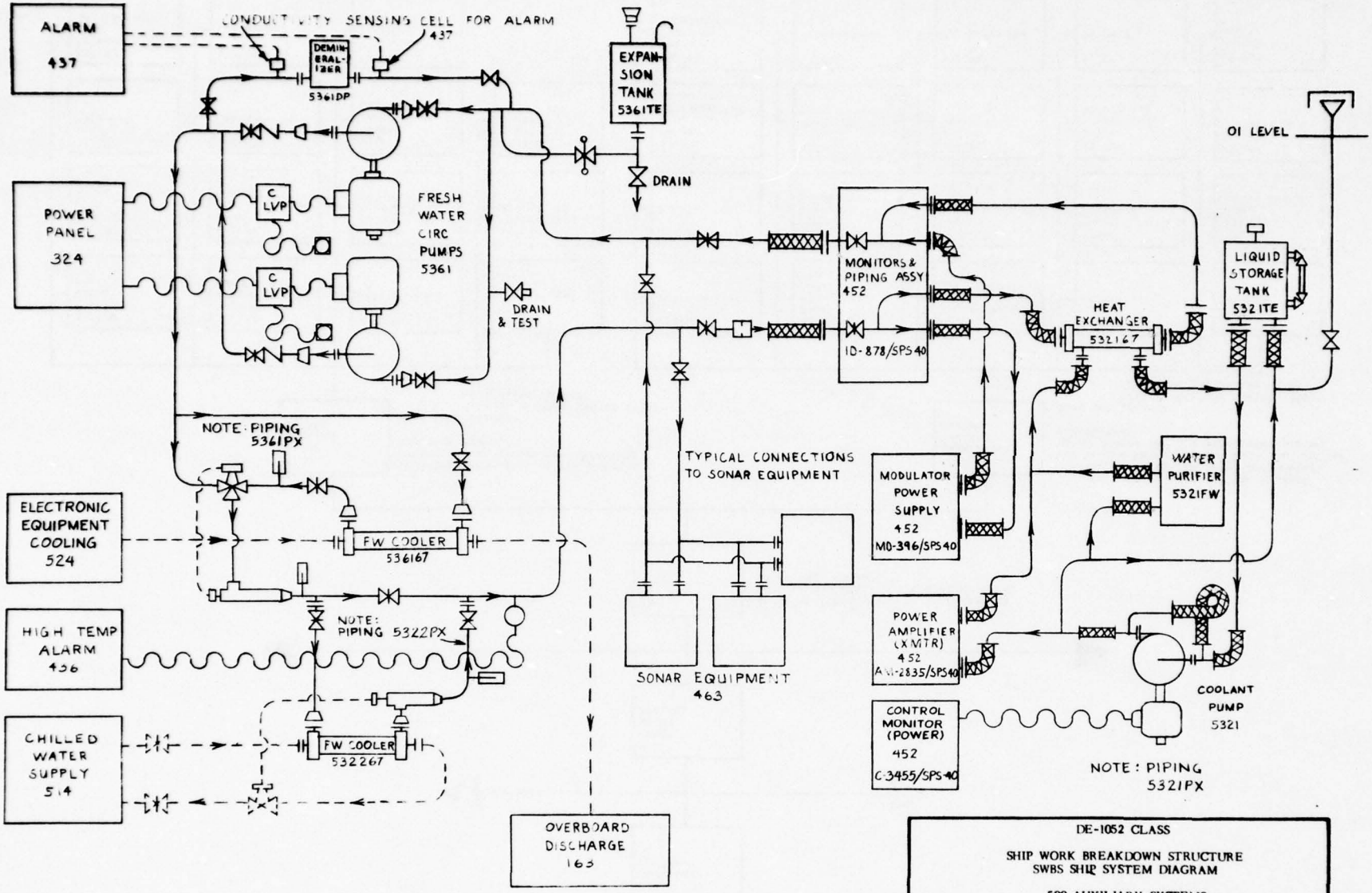

500 T000
Auxiliary Systems
520 T800
Sea Water System
529 TA00
Drainage and Ballasting System
5291
Main Drainage System
EB01
EM01
Includes piping making up the main drainage system and the systems eductors. Also includes piping associated with deballasting fuel oil or ballast tanks and bilge and fuel oil stripping system and associated fuel oil stripping pump.
Does not include:
Oily Water Bilge Sump Tank (534)
Waste Water Bilge Sump Tank (534)
5292
Secondary Drainage System
EA04
Includes piping and eductors of the secondary drainage system which is independent of and removes water from forward and aft spaces not served by the main drainage system.
5291A4
Valve-Relief
5291EA
Eductor-Liquid
5291GC
Gage-Pressure
5291KX
Valve-Stop Check
5291PX
Piping System Hardware
Includes:
Hose Adapters
Box Strainers
5291QX
Pump-Centrifugal
5291VB
Valve-Angle
5291VE
Valve-Ball
5291VG
Valve-Butterfly
5291VI
Valve-Globe
5291VJ
Valve-Check
5291VR
Valve-Gate
5291VV
Valve-Needle Globe
5291VX
Valve-Plug
5291V5
Manifold Valve Assembly
5291ZY
Strainer-Sediment
5291ZZ
Valve-Scupper
529127
Operator-Valve
52918Q
Pump-Reciprocating Power
Includes:
Bilge and Fuel Oil Stripping Pumps
5292EA
Eductor-Liquid
5292GC
Gage-Pressure
5292KX
Valve-Stop Check
5292K7
Pump-Portable Submersible
5292PX
Piping System Hardware
5292VE
Valve-Ball
5292VG
Valve-Butterfly
5292VI
Valve-Globe
5292VJ
Valve-Check
5292VR
Valve-Gate
5292VV
Valve-Needle
5292V5
Manifold Valve Assembly
FF-1052 Class
Prepared 9-18-76



FF-1052 Class
Prepared 9-18-76



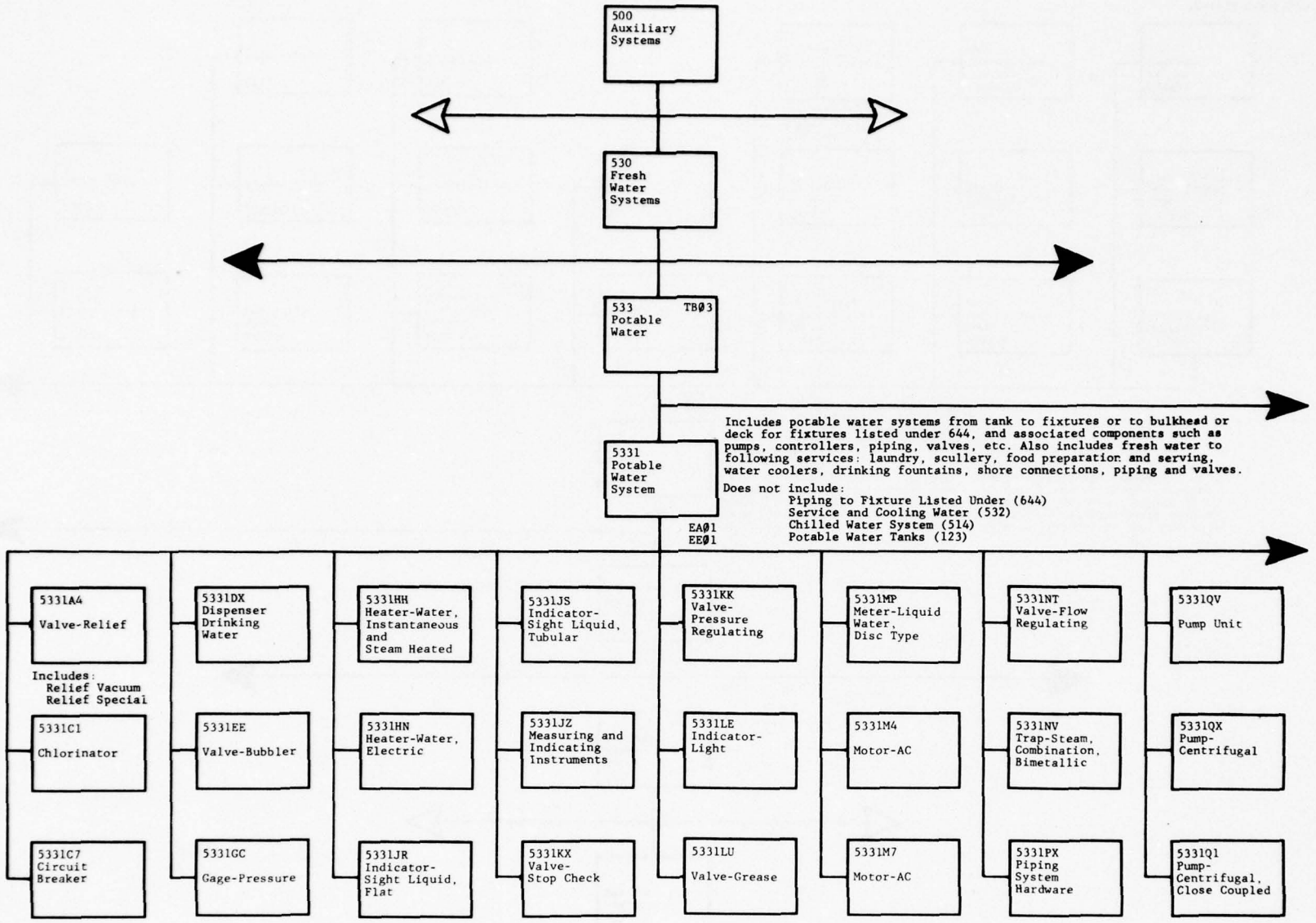
FF-1052 Class
Prepared 9-18-76



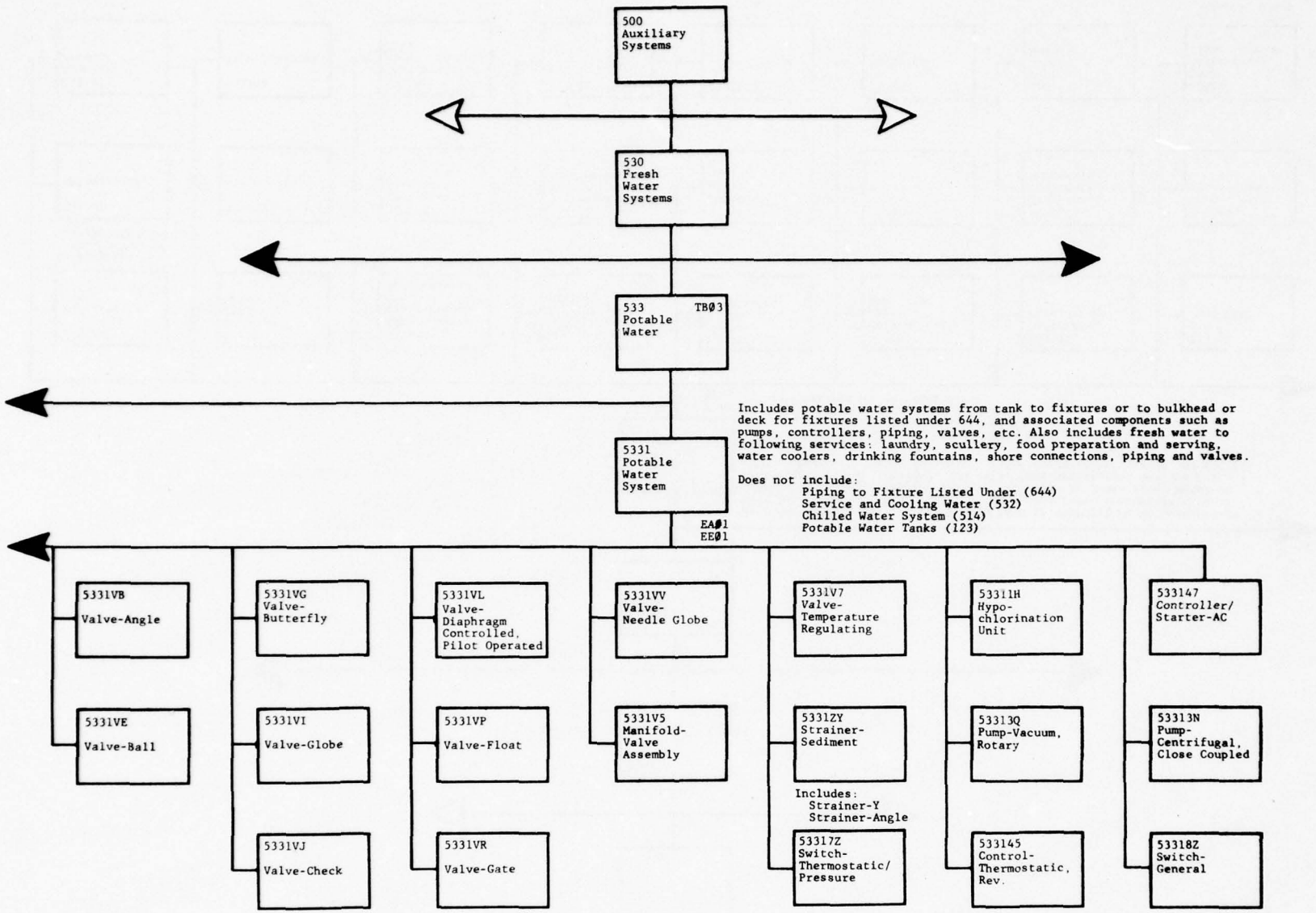
DE-1052 CLASS

SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM

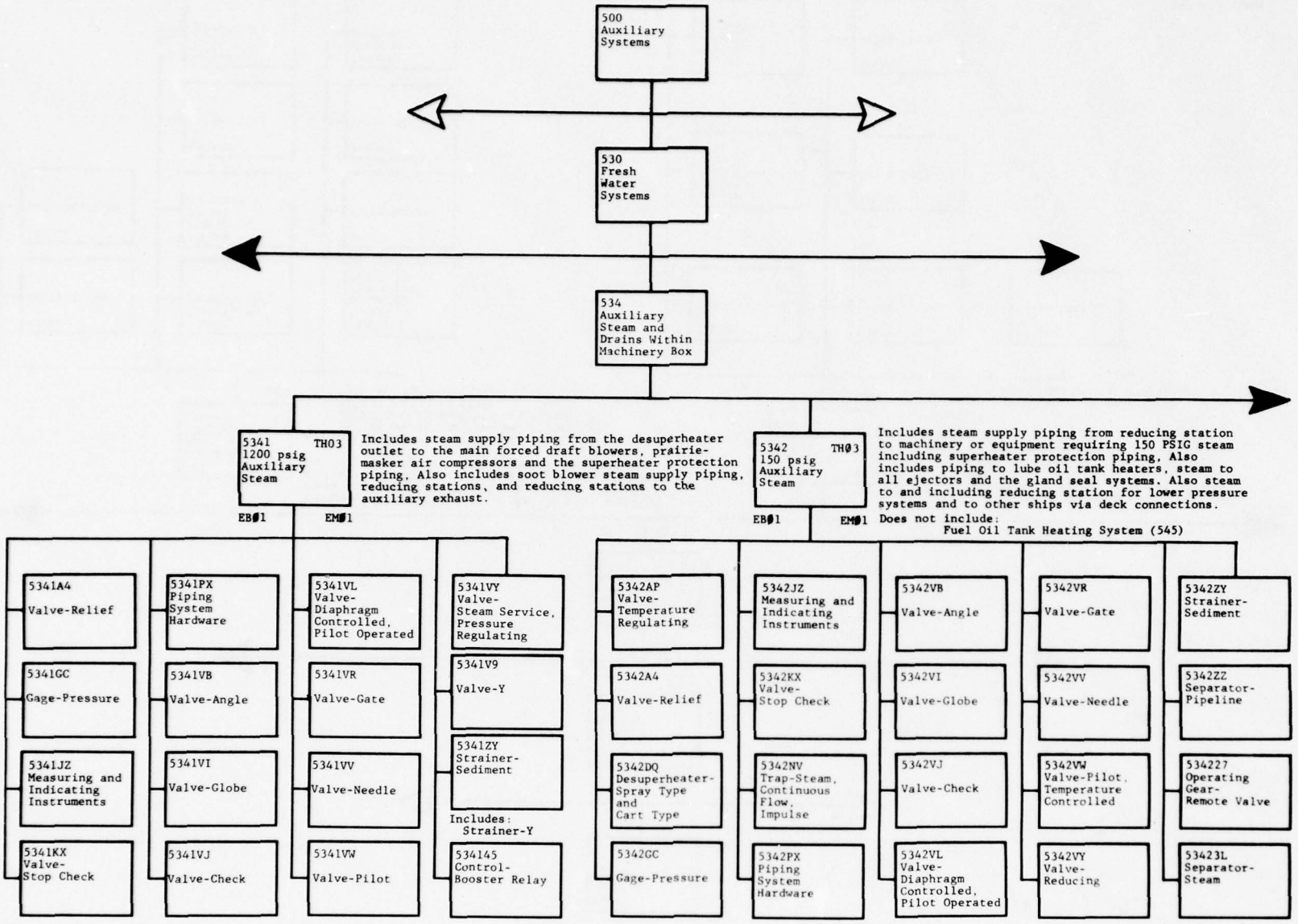
500 AUXILIARY SYSTEMS
530 FRESH WATER SYSTEMS
532 & 536 RADAR AND SONAR COOLING



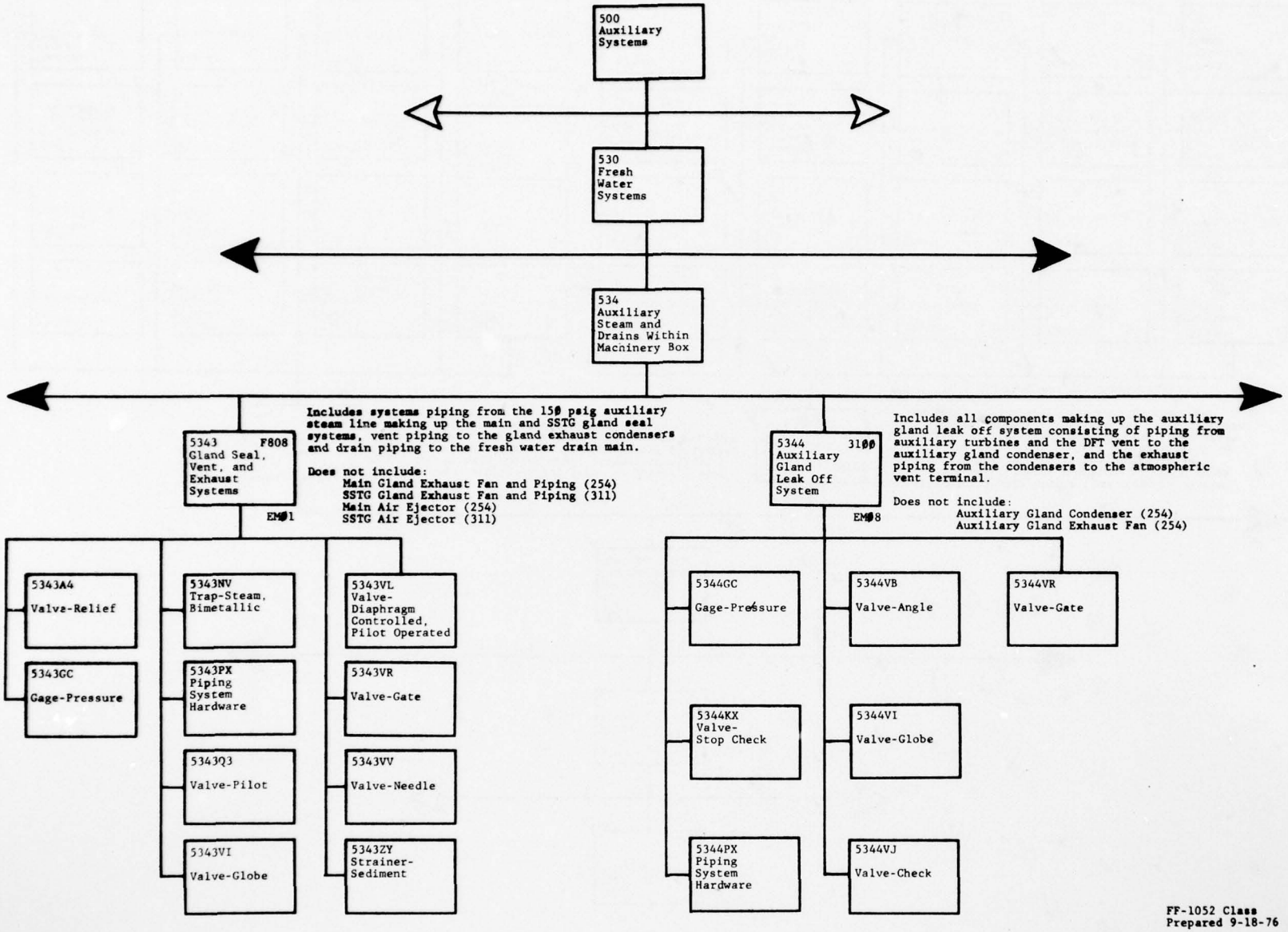
FF-1052 Class
Prepared 9-18-76



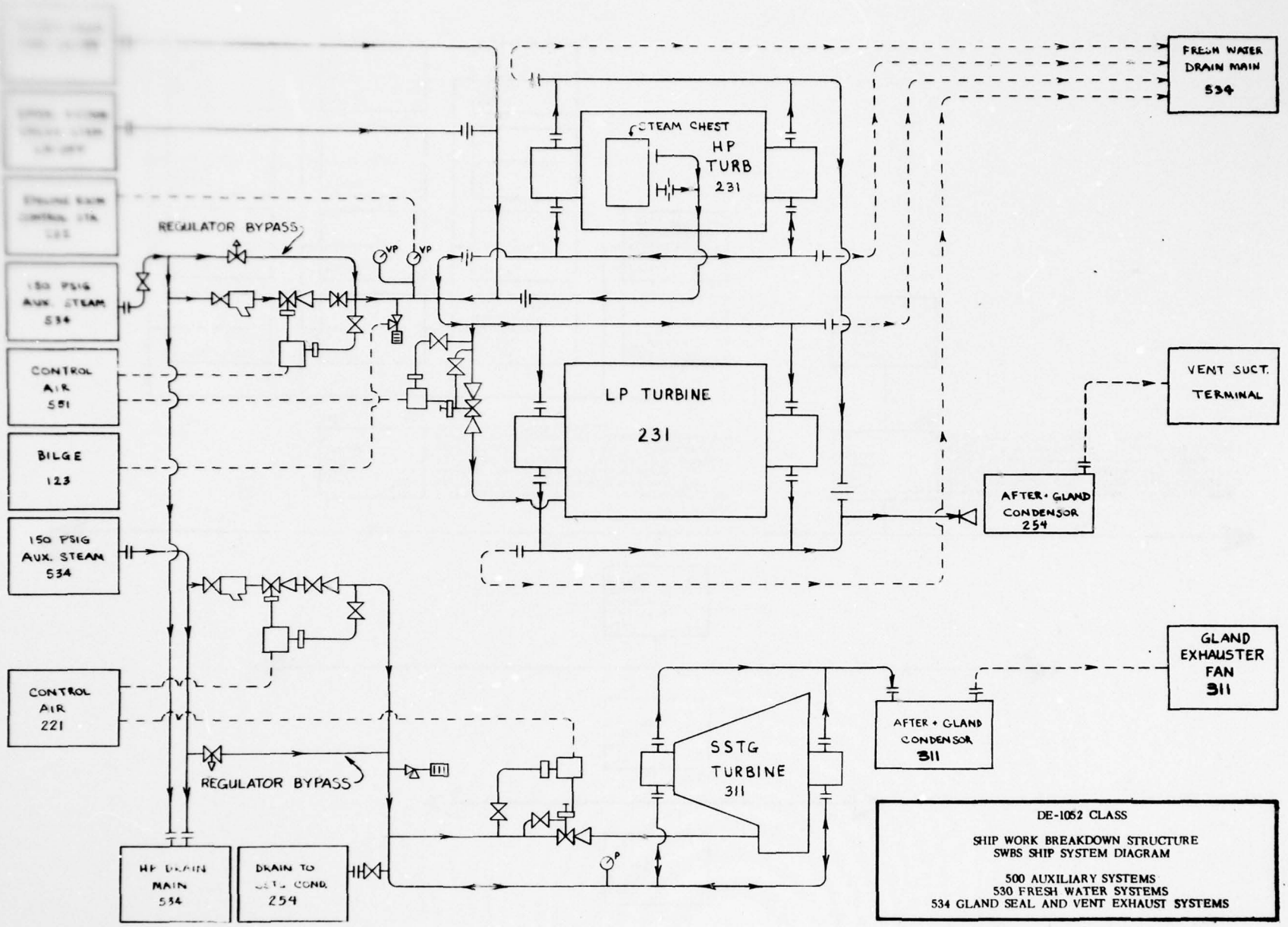
FF-1052 Class
Prepared 9-18-76

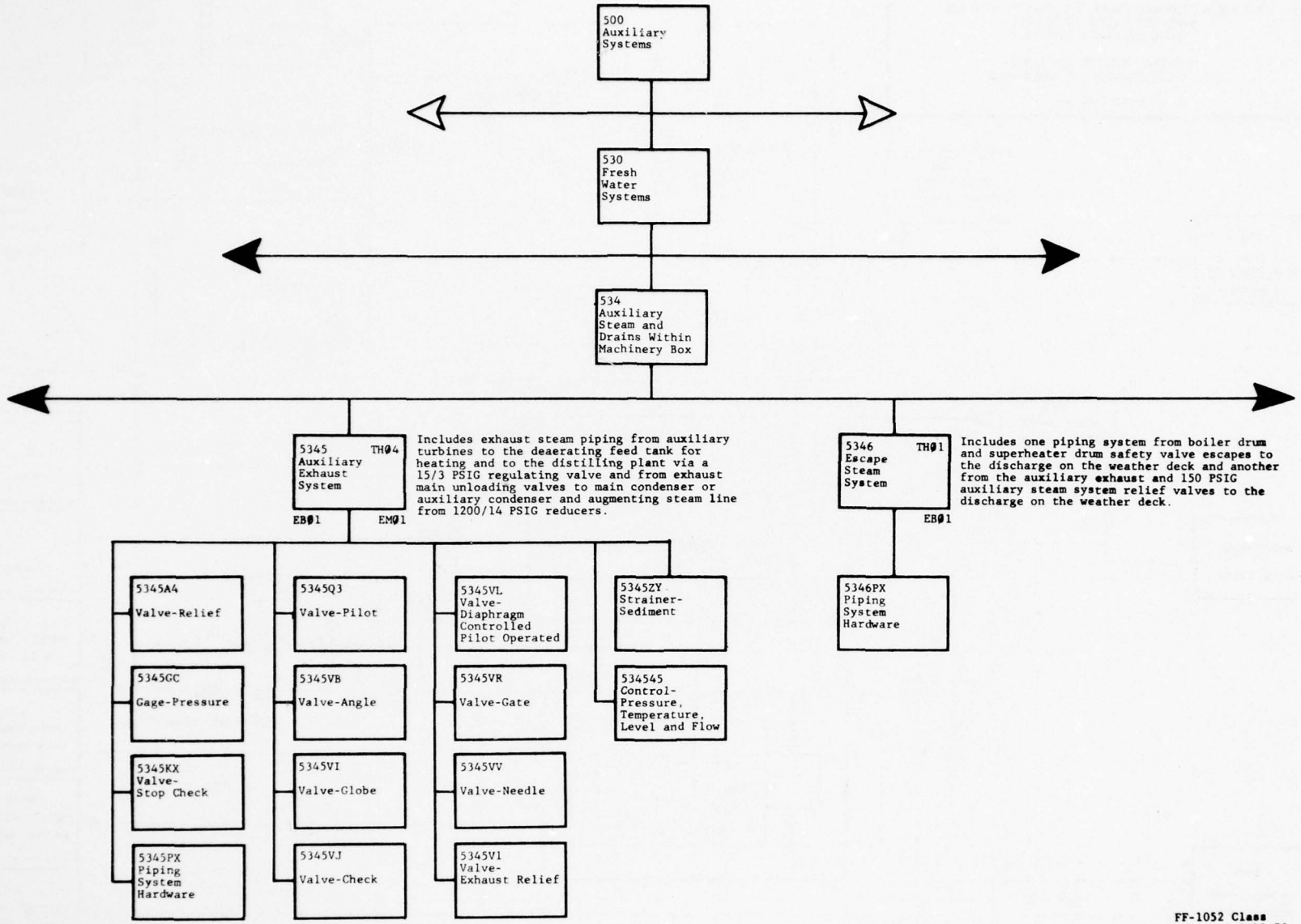


FF-1052 Class
Prepared 9-18-76

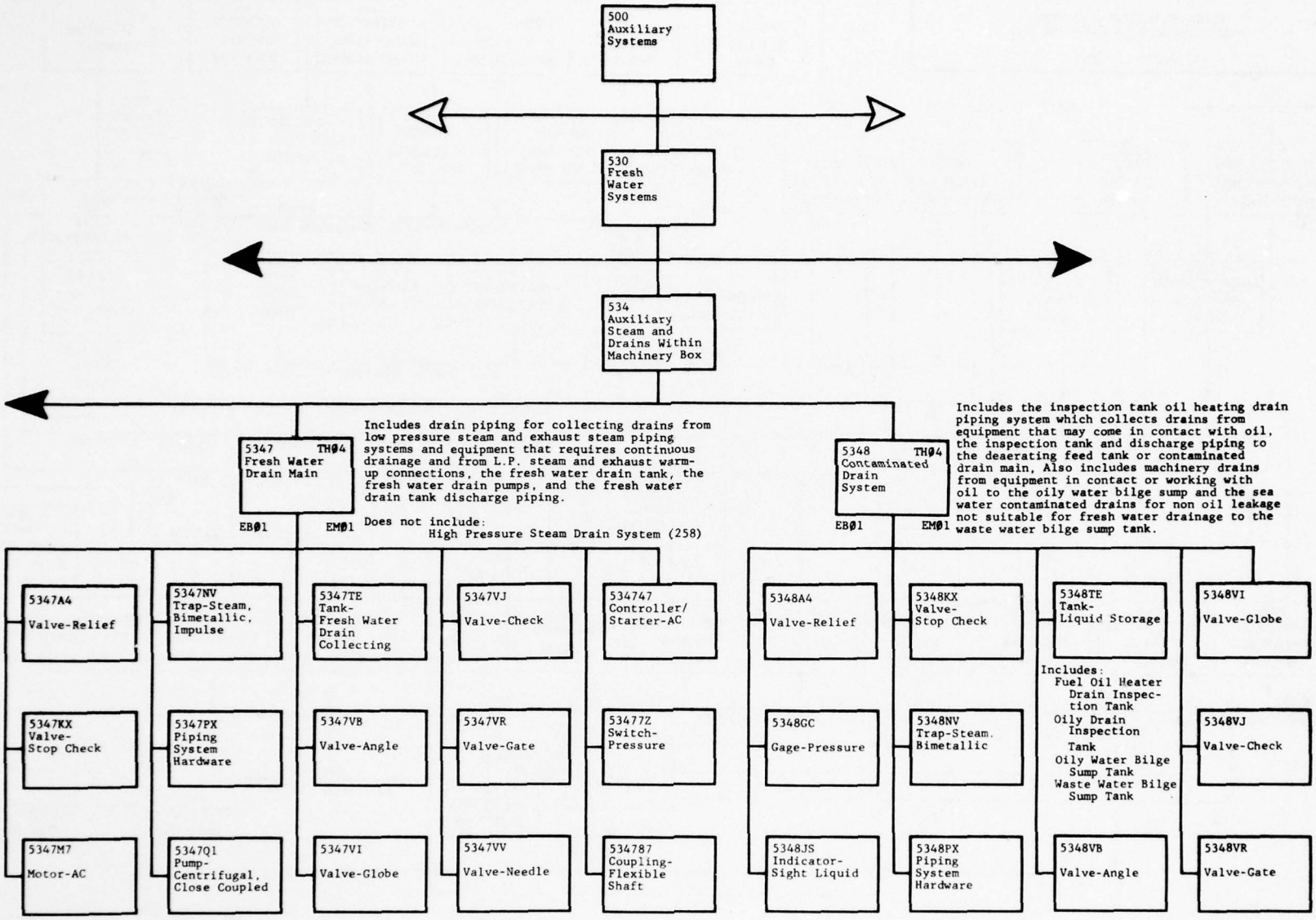


FF-1052 Class
Prepared 9-18-76

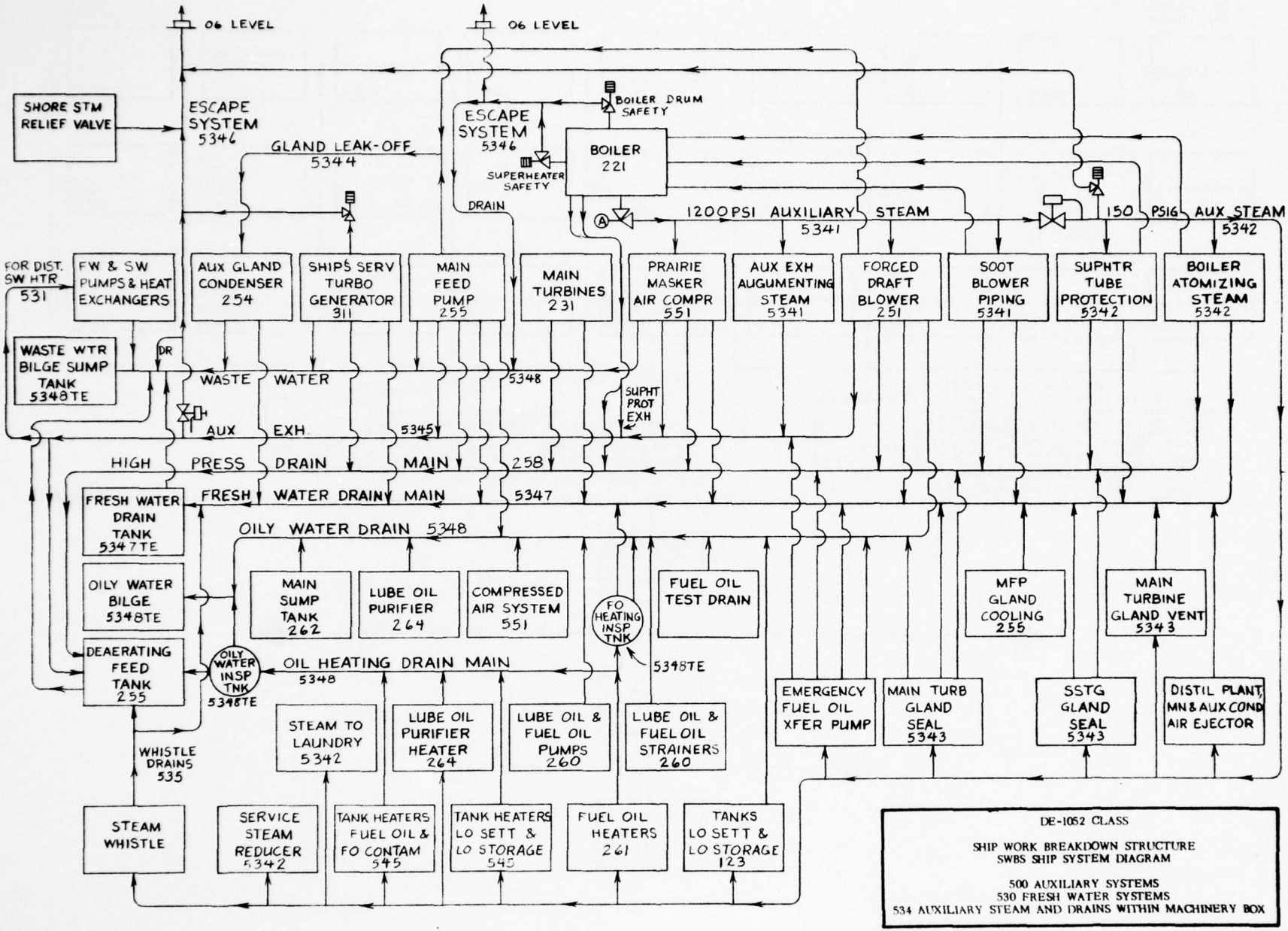

FRESH WATER DRAIN MAIN 534
STEAM CHEST
HP TURB 231
REGULATOR BYPASS
VP
VP
150 PSIG AUX. STEAM 534
CONTROL AIR 551
BILGE 123
LP TURBINE 231
VENT SUCT. TERMINAL
AFTER GLAND CONDENSOR 254
150 PSIG AUX. STEAM 534
GLAND EXHAUSTER FAN 311
CONTROL AIR 221
SSTG TURBINE 311
AFTER GLAND CONDENSOR 311
REGULATOR BYPASS
HP DRAIN MAIN 534
DRAIN TO COND. 254
DE-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
500 AUXILIARY SYSTEMS
530 FRESH WATER SYSTEMS
534 GLAND SEAL AND VENT EXHAUST SYSTEMS

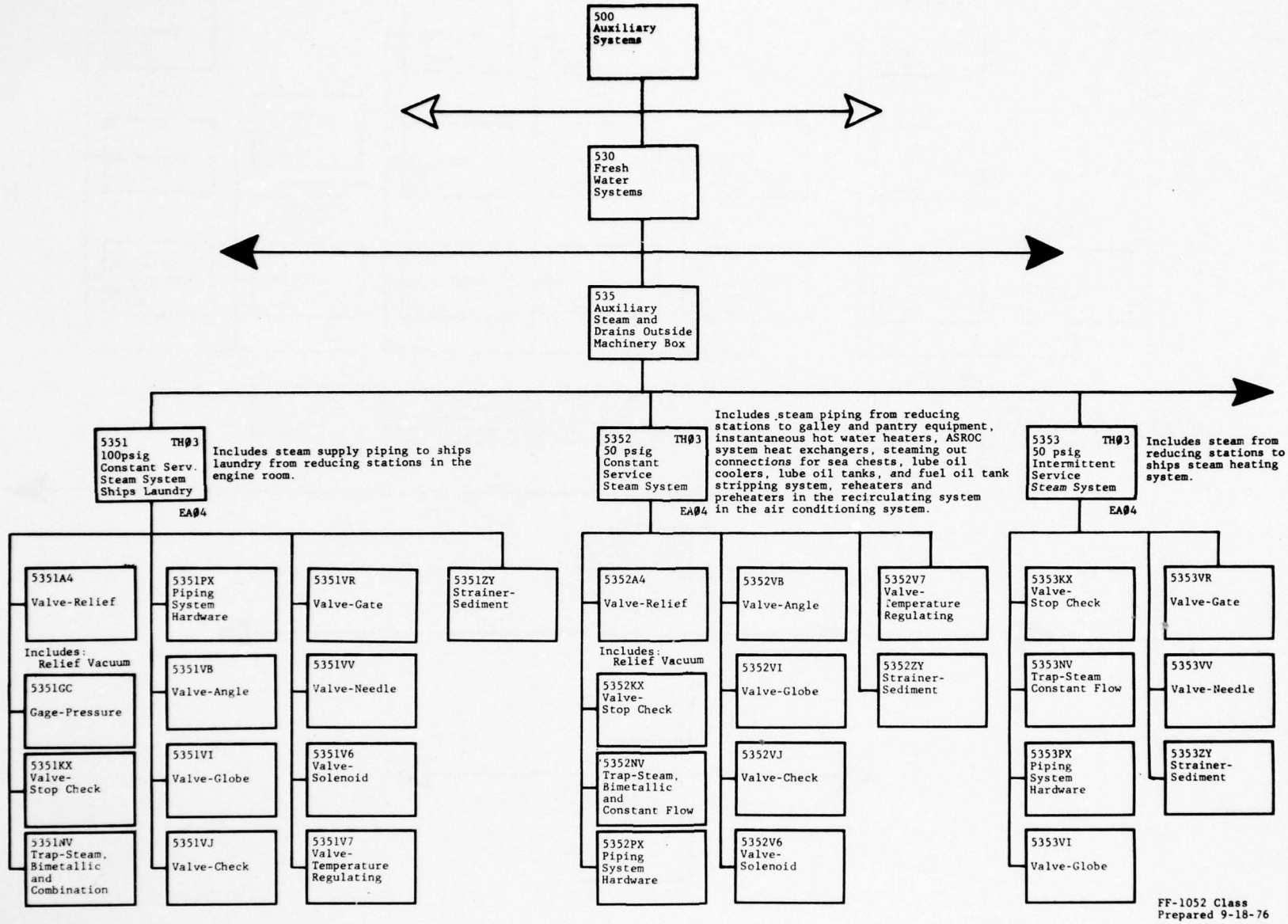


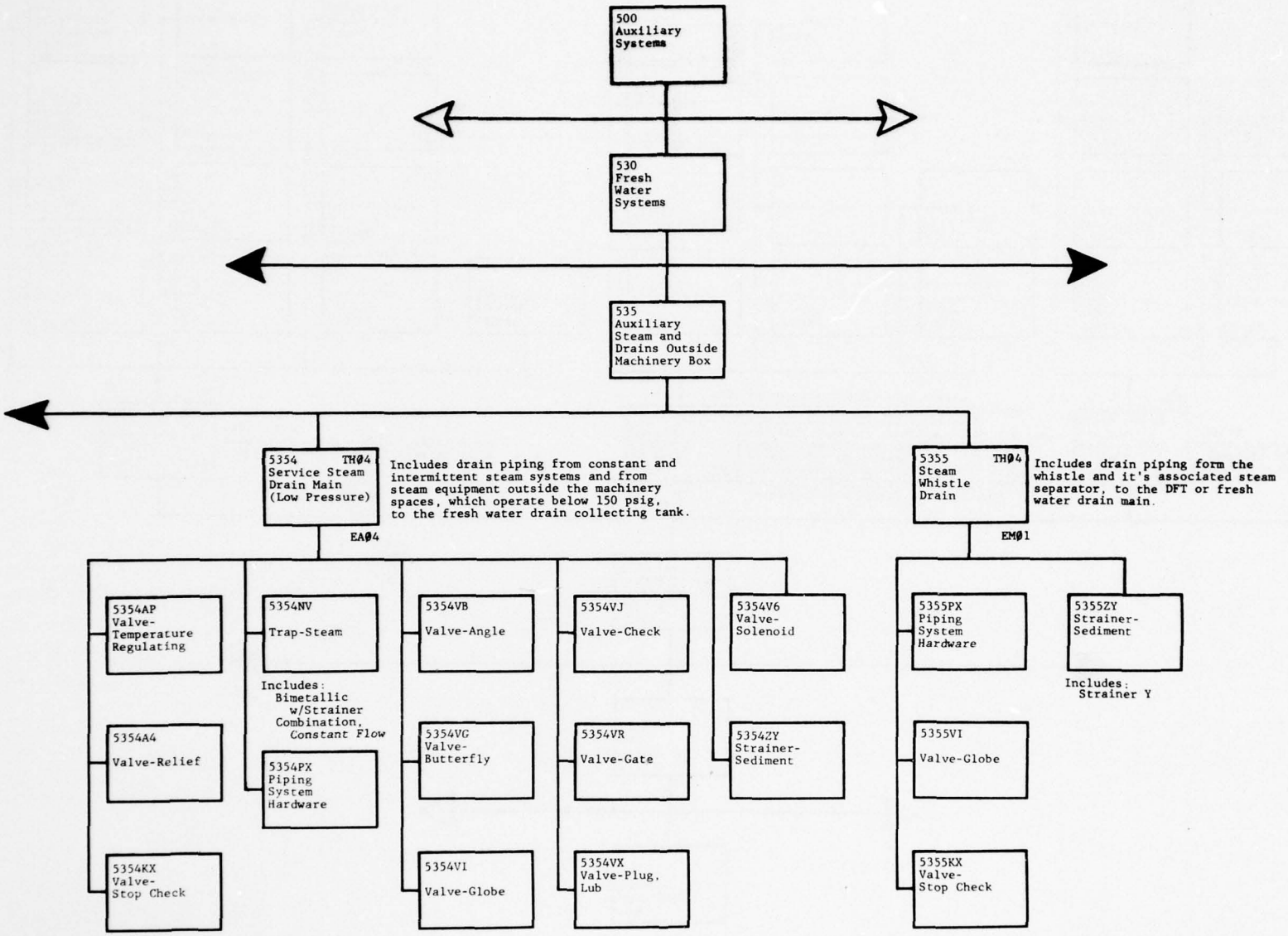
FF-1052 Class
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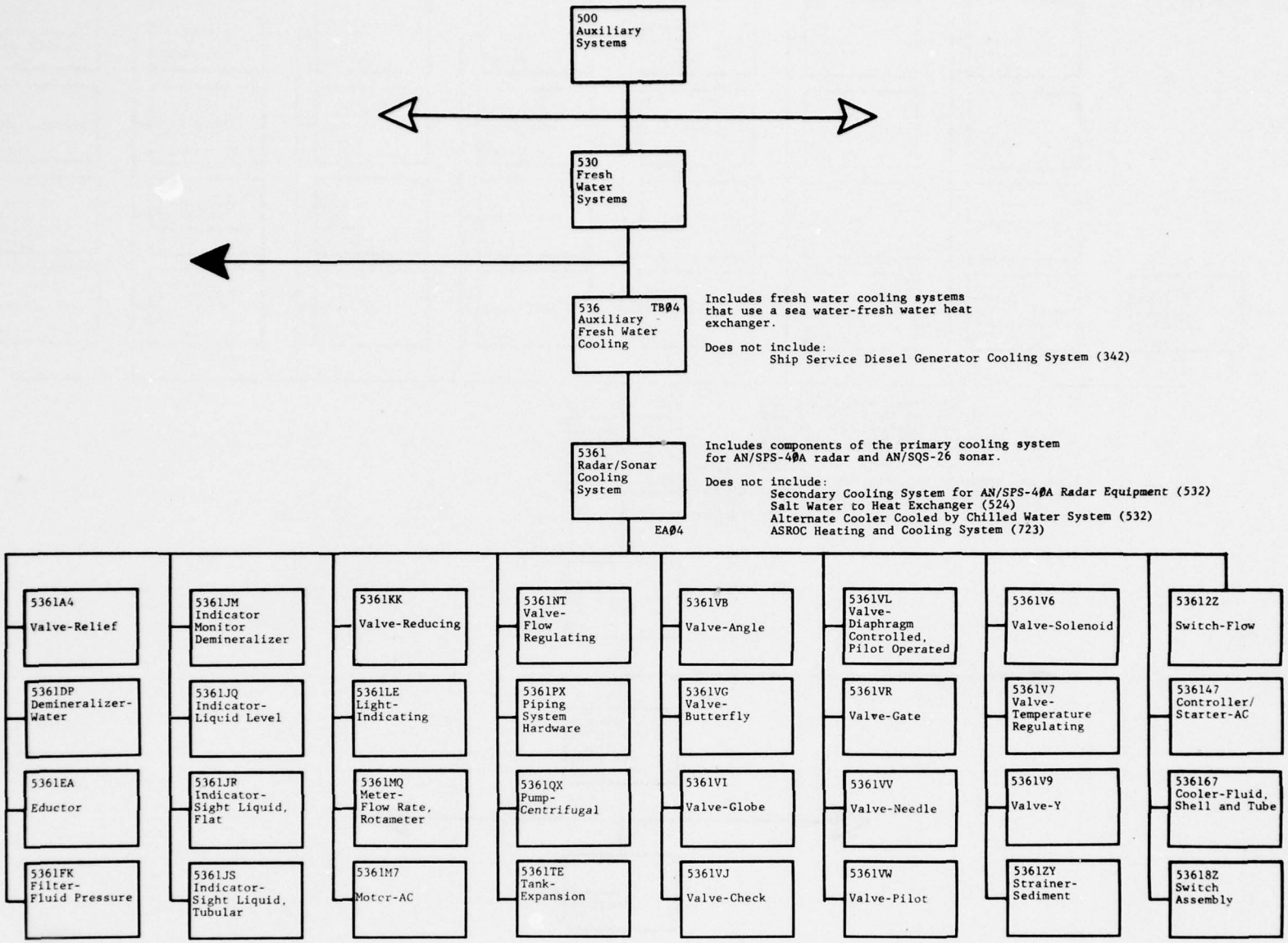
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06 LEVEL
06 LEVEL
SHORE STM RELIEF VALVE
ESCAPE SYSTEM 5346
GLAND LEAK-OFF 5344
ESCAPE SYSTEM 5346
BOILER DRUM SAFETY
SUPERHEATER SAFETY
BOILER 221
DRAIN
1200 PSI AUXILIARY STEAM 5341
150 PSIG AUX STEAM 5342
FOR DIST. SW HTR 531
FW & SW PUMPS & HEAT EXCHANGERS
AUX GLAND CONDENSER 254
SHIPS SERV TURBO GENERATOR 311
MAIN FEED PUMP 255
MAIN TURBINES 231
PRAIRIE MASKER AIR COMPR 551
AUX EXH AUGUMENTING STEAM 5341
FORCED DRAFT BLOWER 251
SOOT BLOWER PIPING 5341
SUPHTR TUBE PROTECTION 5342
BOILER ATOMIZING STEAM 5342
WASTE WTR BILGE SUMP TANK 5348TE
DR
WASTE WATER 5348
SUPHT PROT EXH
AUX EXH 5345
HIGH PRESS DRAIN MAIN 258
FRESH WATER DRAIN MAIN 5347
FRESH WATER DRAIN TANK 5347TE
OILY WATER DRAIN 5348
OILY WATER BILGE 5348TE
MAIN SUMP TANK 262
LUBE OIL PURIFIER 264
COMPRESSED AIR SYSTEM 551
FO HEATING INSP TNK
FUEL OIL TEST DRAIN
MFP GLAND COOLING 255
MAIN TURBINE GLAND VENT 5343
DEAERATING FEED TANK 255
OILY WATER INSP TNK 5348TE
OIL HEATING DRAIN MAIN 5348
5348TE
EMERGENCY FUEL OIL XFER PUMP
MAIN TURB GLAND SEAL 5343
SSTG GLAND SEAL 5343
DISTIL PLANT MN & AUX COND AIR EJECTOR
WHISTLE DRAINS 535
STEAM TO LAUNDRY 5342
LUBE OIL PURIFIER HEATER 264
LUBE OIL & FUEL OIL PUMPS 260
LUBE OIL & FUEL OIL STRAINERS 260
STEAM WHISTLE
SERVICE STEAM REDUCER 5342
TANK HEATERS FUEL OIL & FO CONTAM 545
TANK HEATERS LO SETT & LO STORAGE 545
FUEL OIL HEATERS 261
TANKS LO SETT & LO STORAGE 123
DE-1052 CLASS
SHIP WORK BREAKDOWN STRUCTURE
SWBS SHIP SYSTEM DIAGRAM
500 AUXILIARY SYSTEMS
530 FRESH WATER SYSTEMS
534 AUXILIARY STEAM AND DRAINS WITHIN MACHINERY BOX

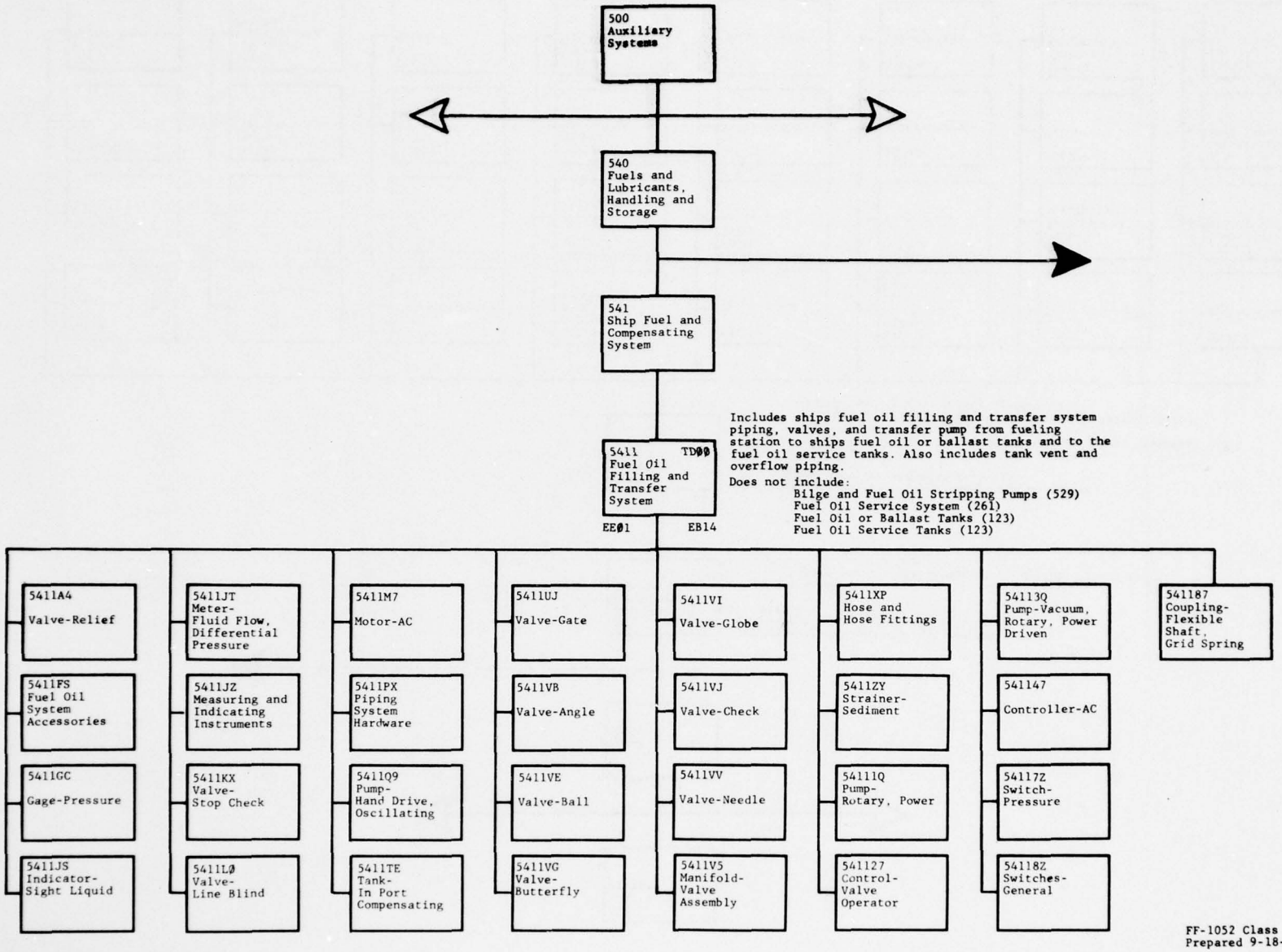

500
Auxiliary
Systems
530
Fresh
Water
Systems
535
Auxiliary
Steam and
Drains Outside
Machinery Box
5351 TH03
100psig
Constant Serv.
Steam System
Ships Laundry
EA04
Includes steam supply piping to ships laundry from reducing stations in the engine room.
5351A4
Valve-Relief
Includes:
Relief Vacuum
5351GC
Gage-Pressure
5351KX
Valve-
Stop Check
5351NV
Trap-Steam,
Bimetallic
and
Combination
5351PX
Piping
System
Hardware
5351VB
Valve-Angle
5351VI
Valve-Globe
5351VJ
Valve-Check
5351VR
Valve-Gate
5351VV
Valve-Needle
5351V6
Valve-
Solenoid
5351V7
Valve-
Temperature
Regulating
5351ZY
Strainer-
Sediment
5352 TH03
50 psig
Constant
Service
Steam System
EA04
Includes steam piping from reducing stations to galley and pantry equipment, instantaneous hot water heaters, ASROC system heat exchangers, steaming out connections for sea chests, lube oil coolers, lube oil tanks, and fuel oil tank stripping system, reheaters and preheaters in the recirculating system in the air conditioning system.
5352A4
Valve-Relief
Includes:
Relief Vacuum
5352KX
Valve-
Stop Check
5352NV
Trap-Steam,
Bimetallic
and
Constant Flow
5352PX
Piping
System
Hardware
5352VB
Valve-Angle
5352VI
Valve-Globe
5352VJ
Valve-Check
5352V6
Valve-
Solenoid
5352V7
Valve-
Temperature
Regulating
5352ZY
Strainer-
Sediment
5353 TH03
50 psig
Intermittent
Service
Steam System
EA04
Includes steam from reducing stations to ships steam heating system.
5353KX
Valve-
Stop Check
5353NV
Trap-Steam
Constant Flow
5353PX
Piping
System
Hardware
5353VI
Valve-Globe
5353VR
Valve-Gate
5353VV
Valve-Needle
5353ZY
Strainer-
Sediment
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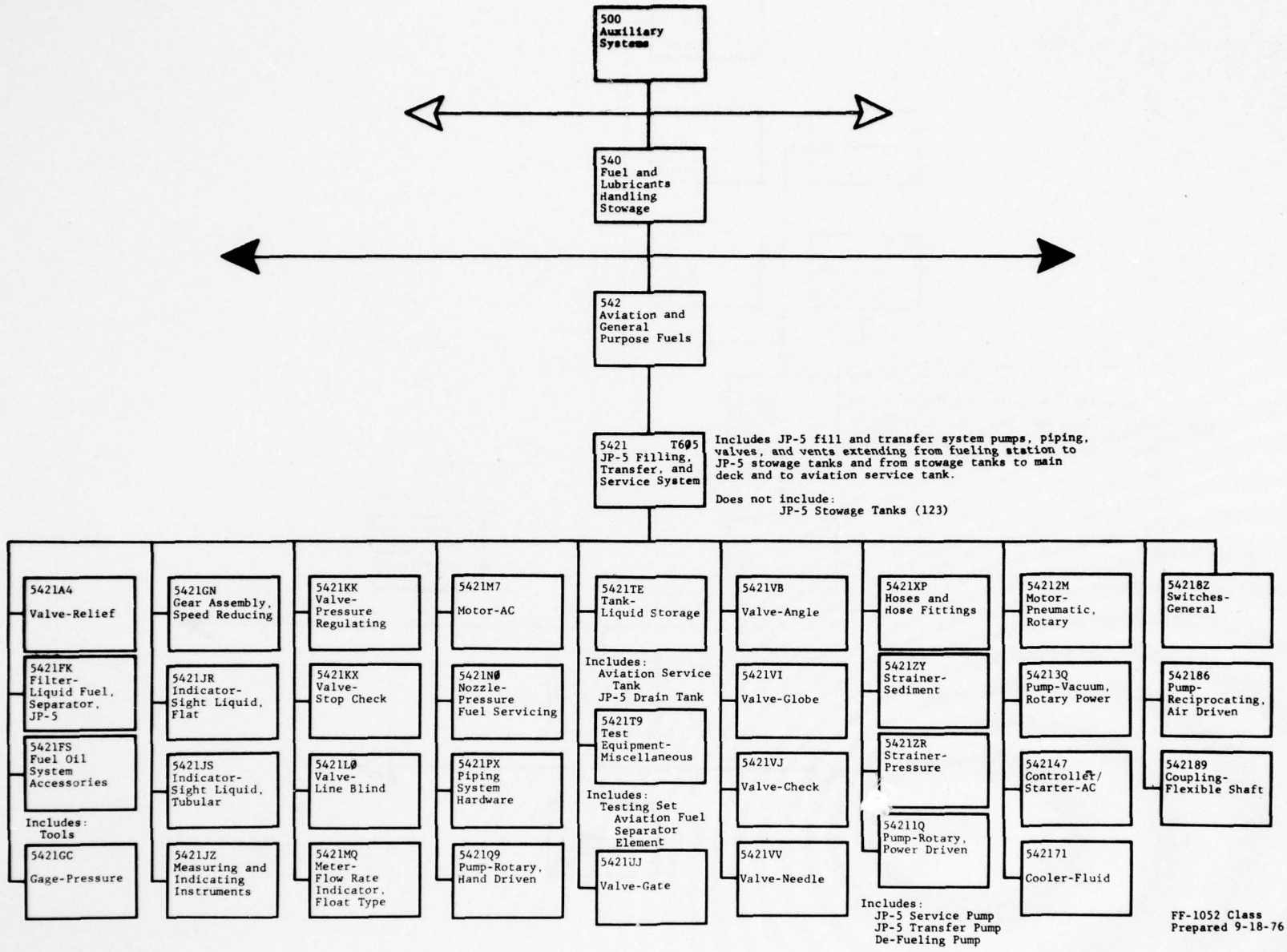


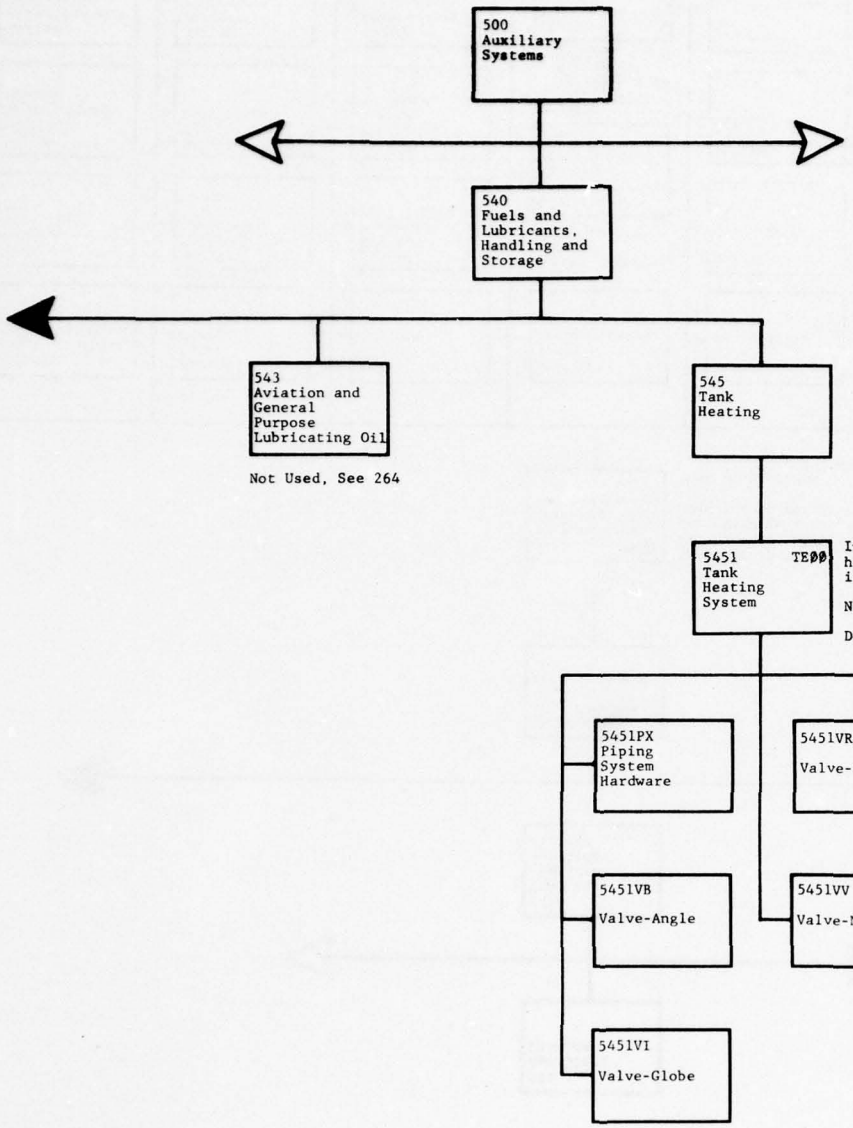
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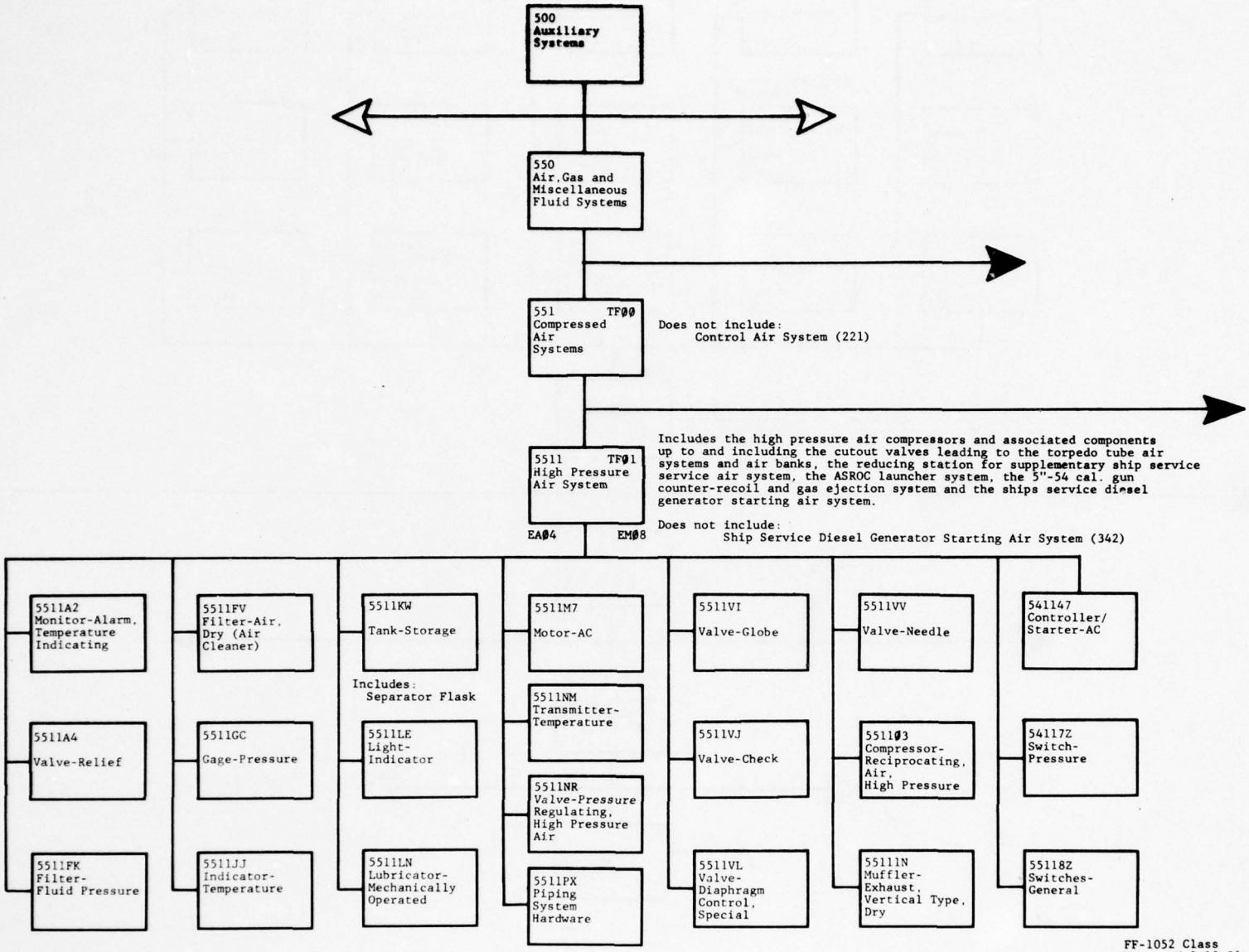
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500
Auxiliary Systems
540
Fuels and Lubricants, Handling and Storage
541
Ship Fuel and Compensating System
5411 TD00
Fuel Oil Filling and Transfer System
EE01 EB14
Includes ships fuel oil filling and transfer system piping, valves, and transfer pump from fueling station to ships fuel oil or ballast tanks and to the fuel oil service tanks. Also includes tank vent and overflow piping.
Does not include:
Bilge and Fuel Oil Stripping Pumps (529)
Fuel Oil Service System (261)
Fuel Oil or Ballast Tanks (123)
Fuel Oil Service Tanks (123)
5411A4 Valve-Relief
5411FS Fuel Oil System Accessories
5411GC Gage-Pressure
5411JS Indicator-Sight Liquid
5411JT Meter-Fluid Flow, Differential Pressure
5411JZ Measuring and Indicating Instruments
5411KX Valve-Stop Check
5411L0 Valve-Line Blind
5411M7 Motor-AC
5411PX Piping System Hardware
5411Q9 Pump-Hand Drive, Oscillating
5411TE Tank-In Port Compensating
5411UJ Valve-Gate
5411VB Valve-Angle
5411VE Valve-Ball
5411VG Valve-Butterfly
5411VI Valve-Globe
5411VJ Valve-Check
5411VV Valve-Needle
5411V5 Manifold-Valve Assembly
5411XP Hose and Hose Fittings
5411ZY Strainer-Sediment
54111Q Pump-Rotary, Power
541127 Control-Valve Operator
54113Q Pump-Vacuum, Rotary, Power Driven
541147 Controller-AC
54117Z Switch-Pressure
54118Z Switches-General
541187 Coupling-Flexible Shaft, Grid Spring
FF-1052 Class
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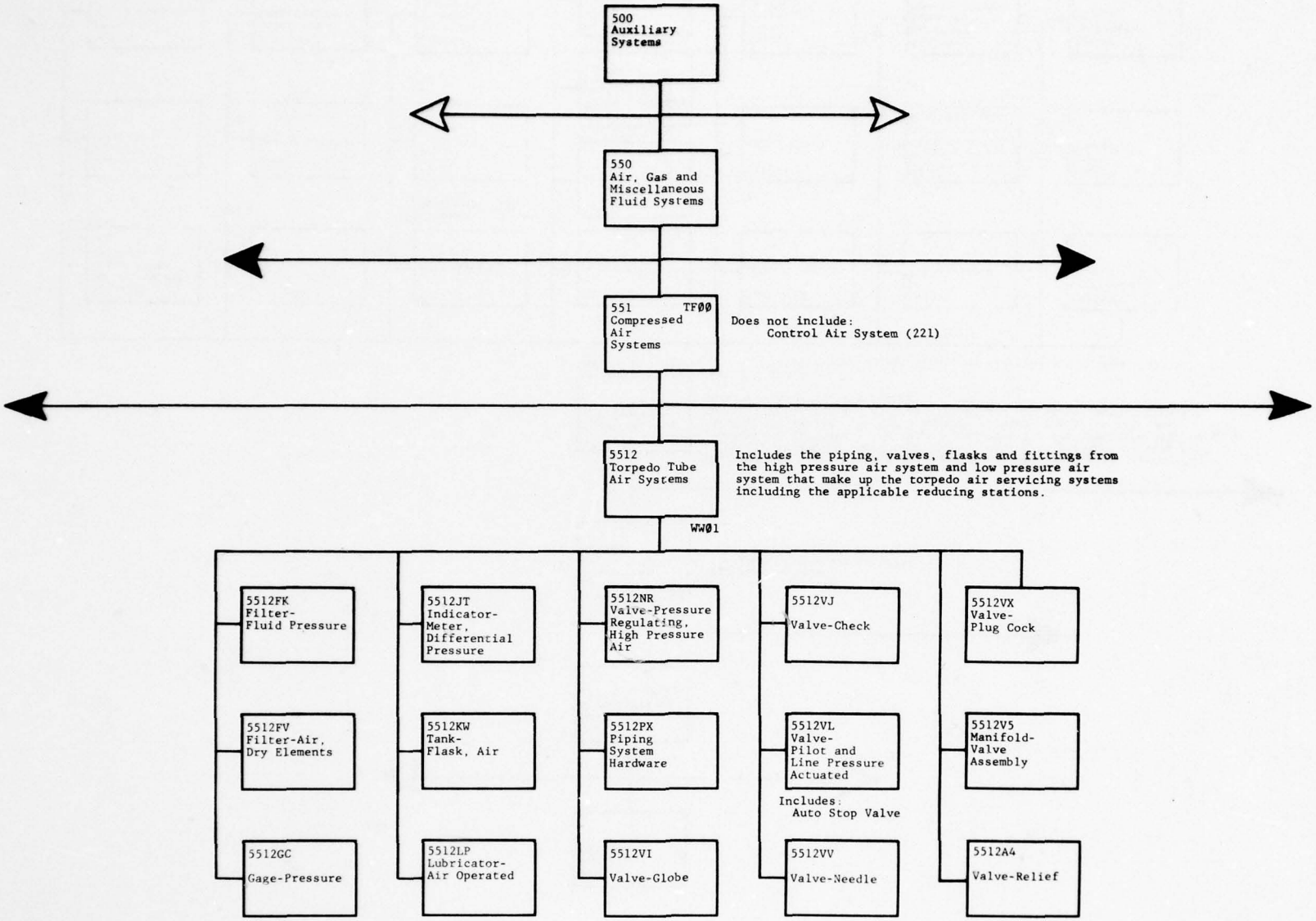

500
Auxiliary Systems
540
Fuel and Lubricants Handling Stowage
542
Aviation and General Purpose Fuels
5421 T605
JP-5 Filling, Transfer, and Service System
Includes JP-5 fill and transfer system pumps, piping, valves, and vents extending from fueling station to JP-5 stowage tanks and from stowage tanks to main deck and to aviation service tank.
Does not include:
JP-5 Stowage Tanks (123)
5421A4
Valve-Relief
5421FK
Filter-Liquid Fuel, Separator, JP-5
5421FS
Fuel Oil System Accessories
Includes:
Tools
5421GC
Gage-Pressure
5421GN
Gear Assembly, Speed Reducing
5421JR
Indicator-Sight Liquid, Flat
5421JS
Indicator-Sight Liquid, Tubular
5421JZ
Measuring and Indicating Instruments
5421KK
Valve-Pressure Regulating
5421KX
Valve-Stop Check
5421LØ
Valve-Line Blind
5421MQ
Meter-Flow Rate Indicator, Float Type
5421M7
Motor-AC
5421NØ
Nozzle-Pressure Fuel Servicing
5421PX
Piping System Hardware
5421Q9
Pump-Rotary, Hand Driven
5421TE
Tank-Liquid Storage
Includes:
Aviation Service Tank
JP-5 Drain Tank
5421T9
Test Equipment-Miscellaneous
Includes:
Testing Set
Aviation Fuel Separator Element
5421UJ
Valve-Gate
5421VB
Valve-Angle
5421VI
Valve-Globe
5421VJ
Valve-Check
5421VV
Valve-Needle
5421XP
Hoses and Hose Fittings
5421ZY
Strainer-Sediment
5421ZR
Strainer-Pressure
54211Q
Pump-Rotary, Power Driven
Includes:
JP-5 Service Pump
JP-5 Transfer Pump
De-Fueling Pump
54212M
Motor-Pneumatic, Rotary
54213Q
Pump-Vacuum, Rotary Power
542147
Controller/Starter-AC
542171
Cooler-Fluid
54218Z
Switches-General
542186
Pump-Reciprocating, Air Driven
542189
Coupling-Flexible Shaft
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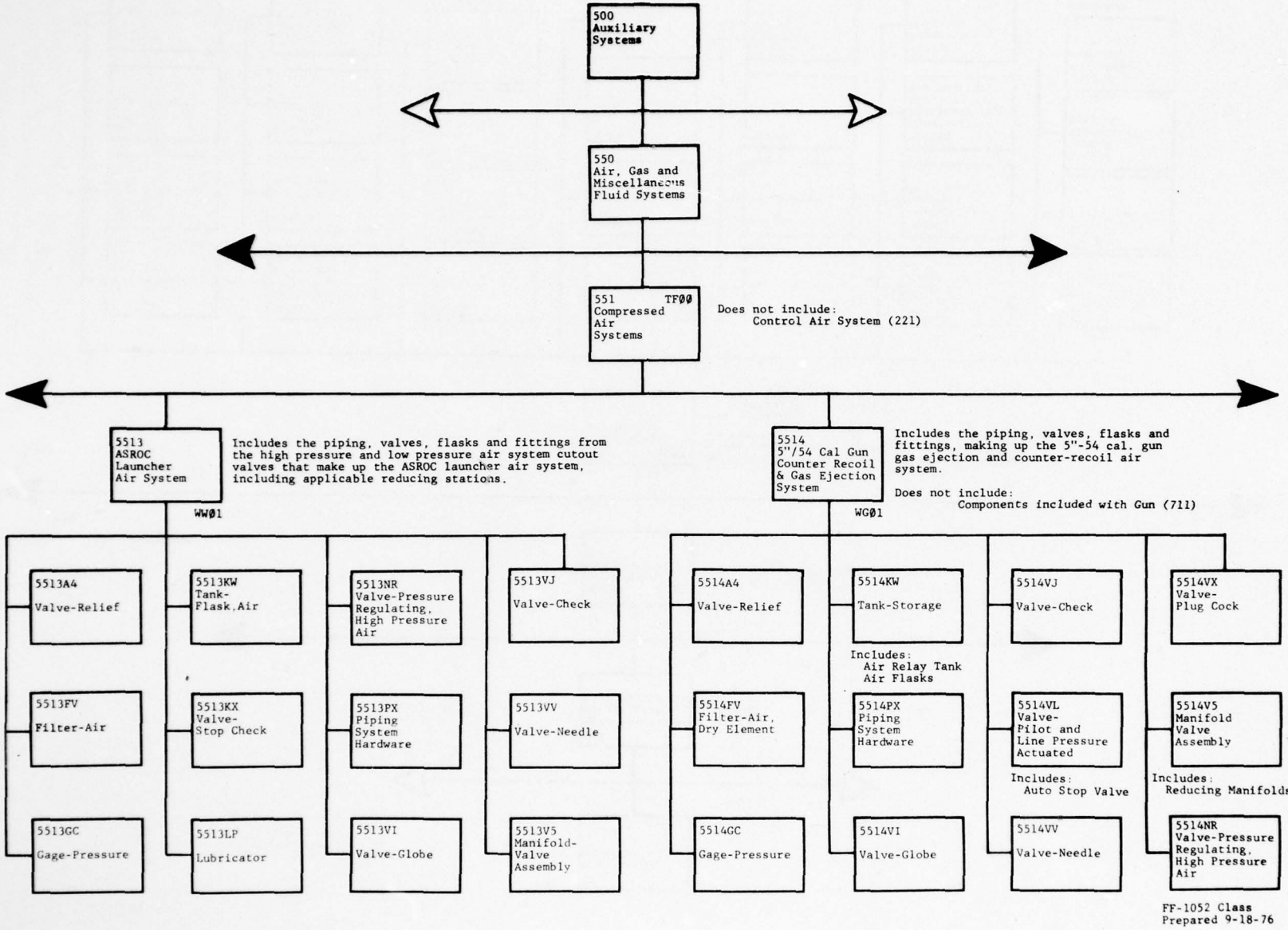
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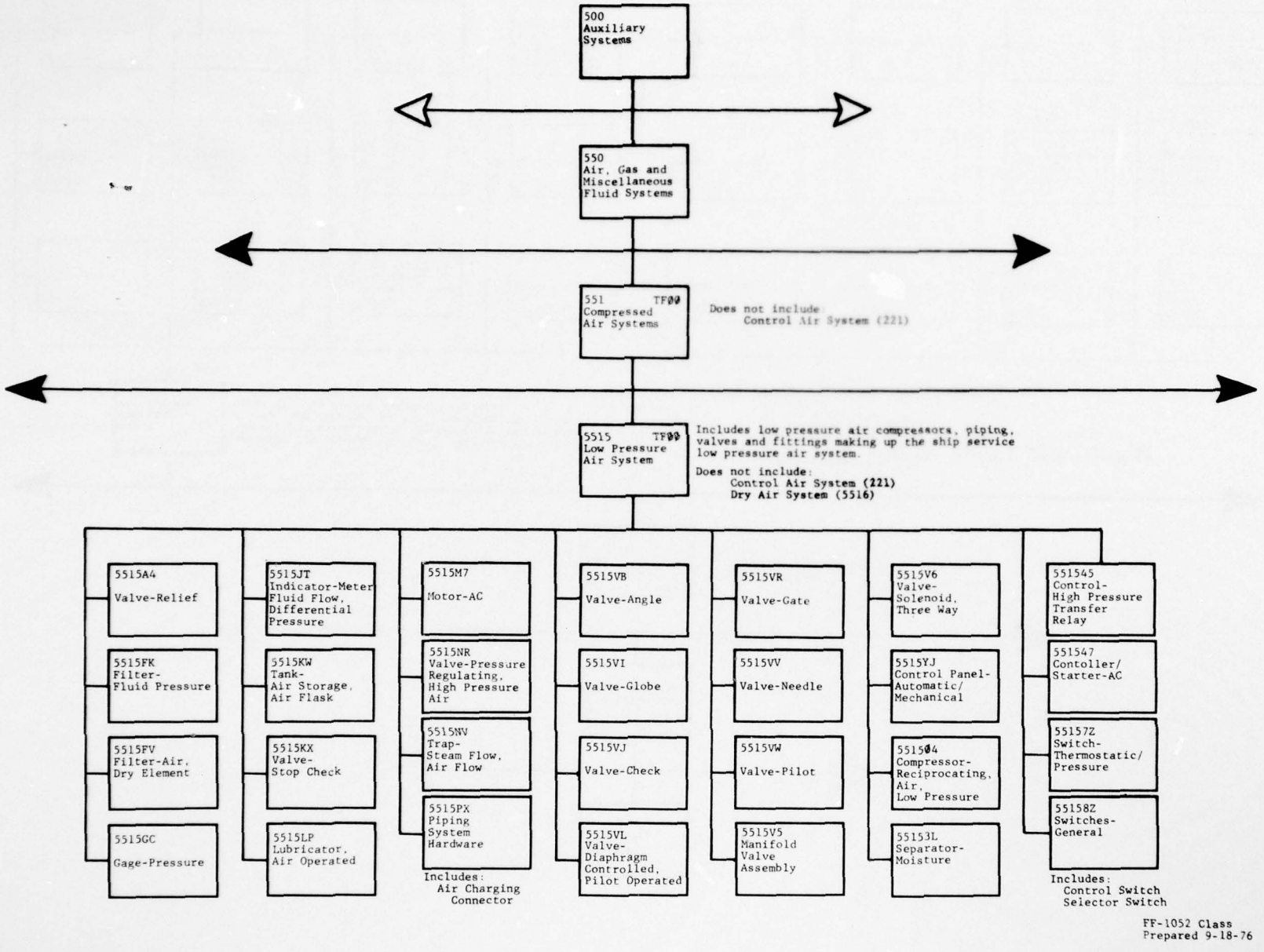


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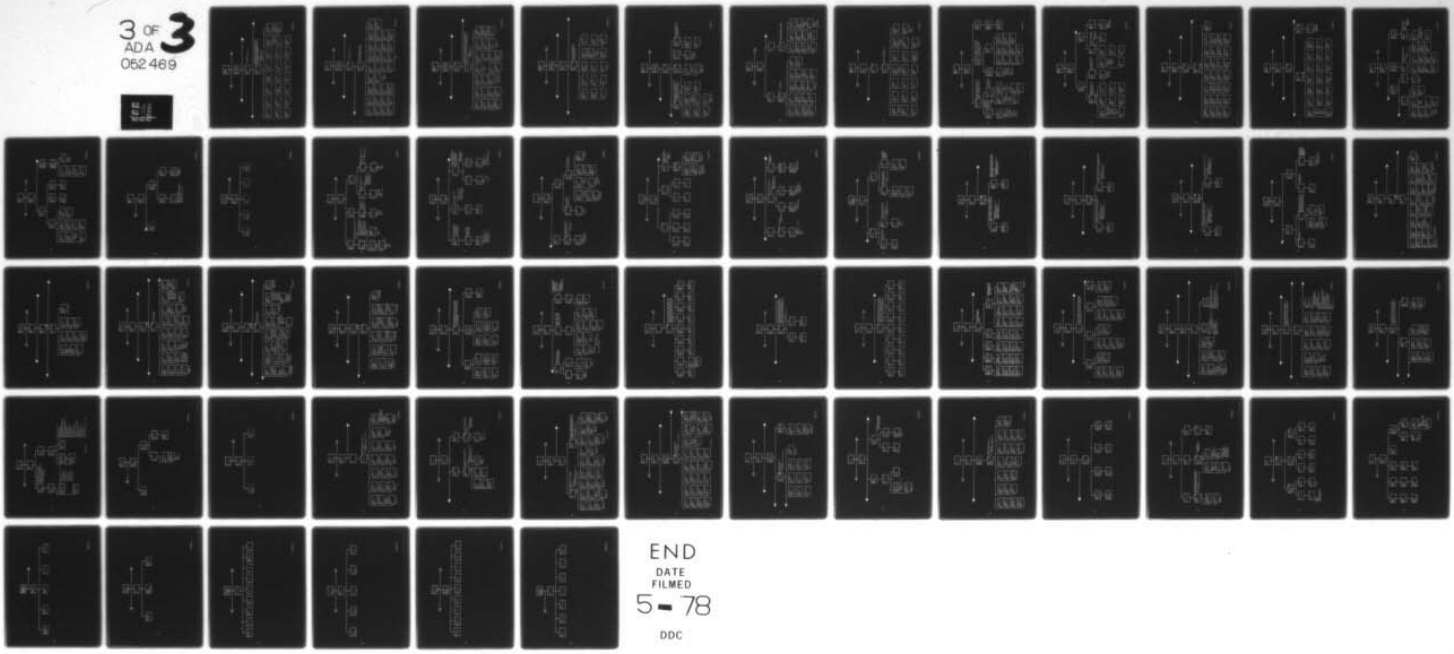

500
Auxiliary Systems
550
Air, Gas and Miscellaneous Fluid Systems
551 TF00
Compressed Air Systems
Does not include:
Control Air System (221)
5513
ASROC Launcher Air System
WW01
Includes the piping, valves, flasks and fittings from the high pressure and low pressure air system cutout valves that make up the ASROC launcher air system, including applicable reducing stations.
5513A4
Valve-Relief
5513FV
Filter-Air
5513GC
Gage-Pressure
5513KW
Tank-Flask,Air
5513KX
Valve-Stop Check
5513LP
Lubricator
5513NR
Valve-Pressure Regulating, High Pressure Air
5513PX
Piping System Hardware
5513VI
Valve-Globe
5513VJ
Valve-Check
5513VV
Valve-Needle
5513V5
Manifold-Valve Assembly
5514
5"/54 Cal Gun Counter Recoil & Gas Ejection System
WG01
Includes the piping, valves, flasks and fittings, making up the 5"-54 cal. gun gas ejection and counter-recoil air system.
Does not include:
Components included with Gun (711)
5514A4
Valve-Relief
5514FV
Filter-Air, Dry Element
5514GC
Gage-Pressure
5514KW
Tank-Storage
Includes:
Air Relay Tank
Air Flasks
5514PX
Piping System Hardware
5514VI
Valve-Globe
5514VJ
Valve-Check
5514VL
Valve-Pilot and Line Pressure Actuated
Includes:
Auto Stop Valve
5514VV
Valve-Needle
5514VX
Valve-Plug Cock
5514V5
Manifold Valve Assembly
Includes:
Reducing Manifolds
5514NR
Valve-Pressure Regulating, High Pressure Air
FF-1052 Class
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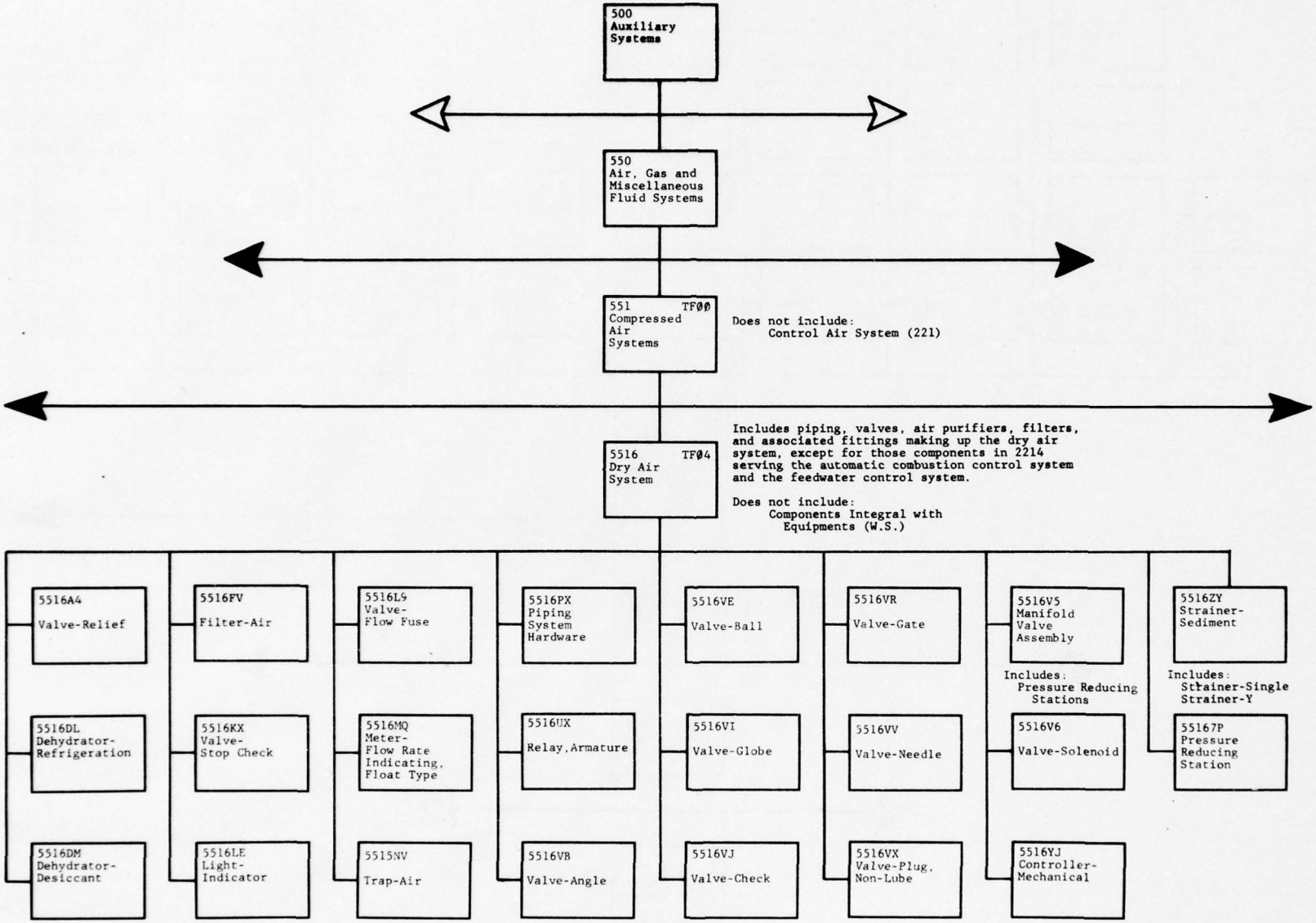
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SHIP SYSTEMS DEFINITION AND INDEX (SWBS STAGING DIAGRAMS) FOR F--ETC(U)
OCT 76 N00140-76-D-0813
UNCLASSIFIED 1804-01-1-1547 NL

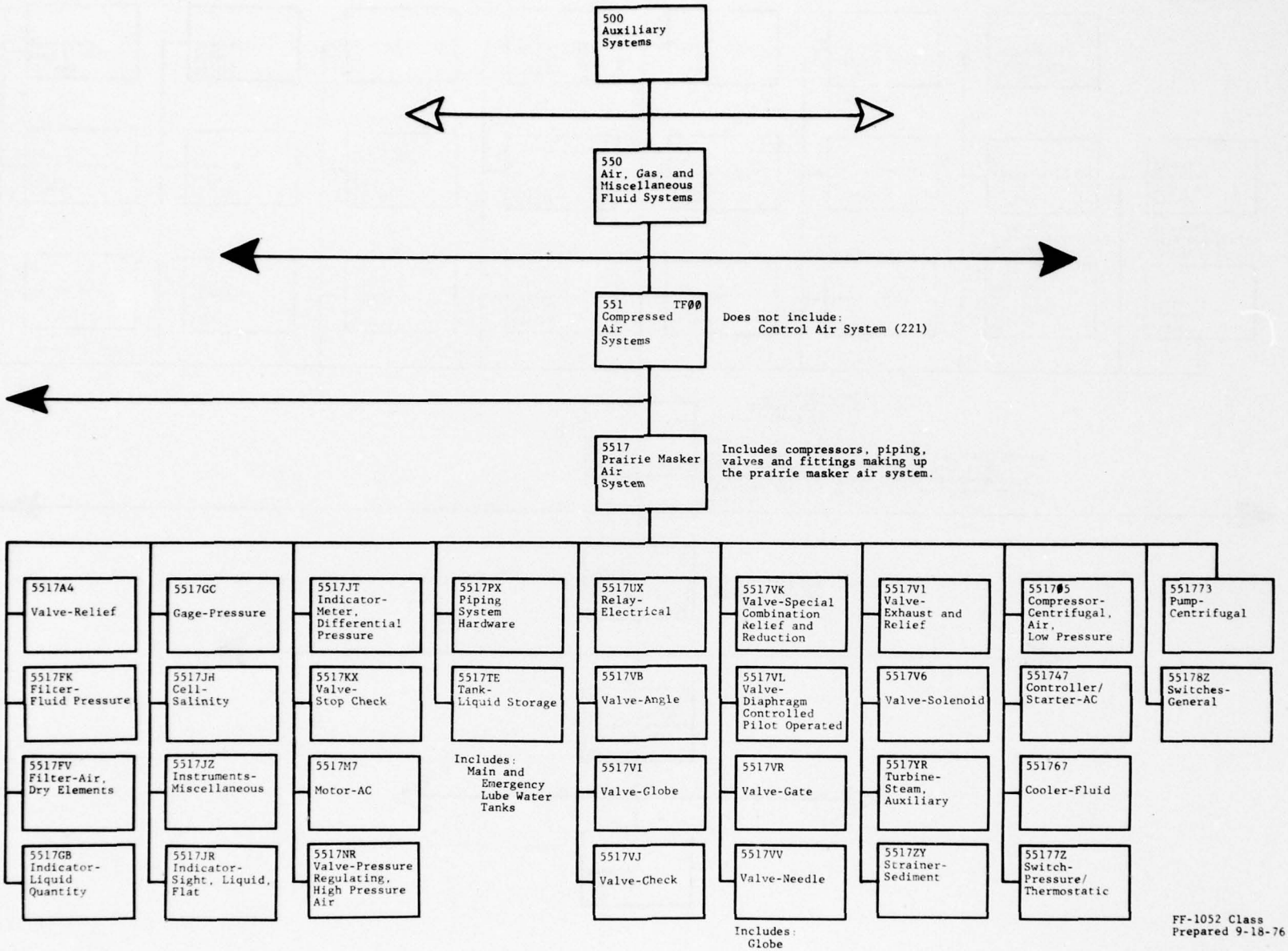
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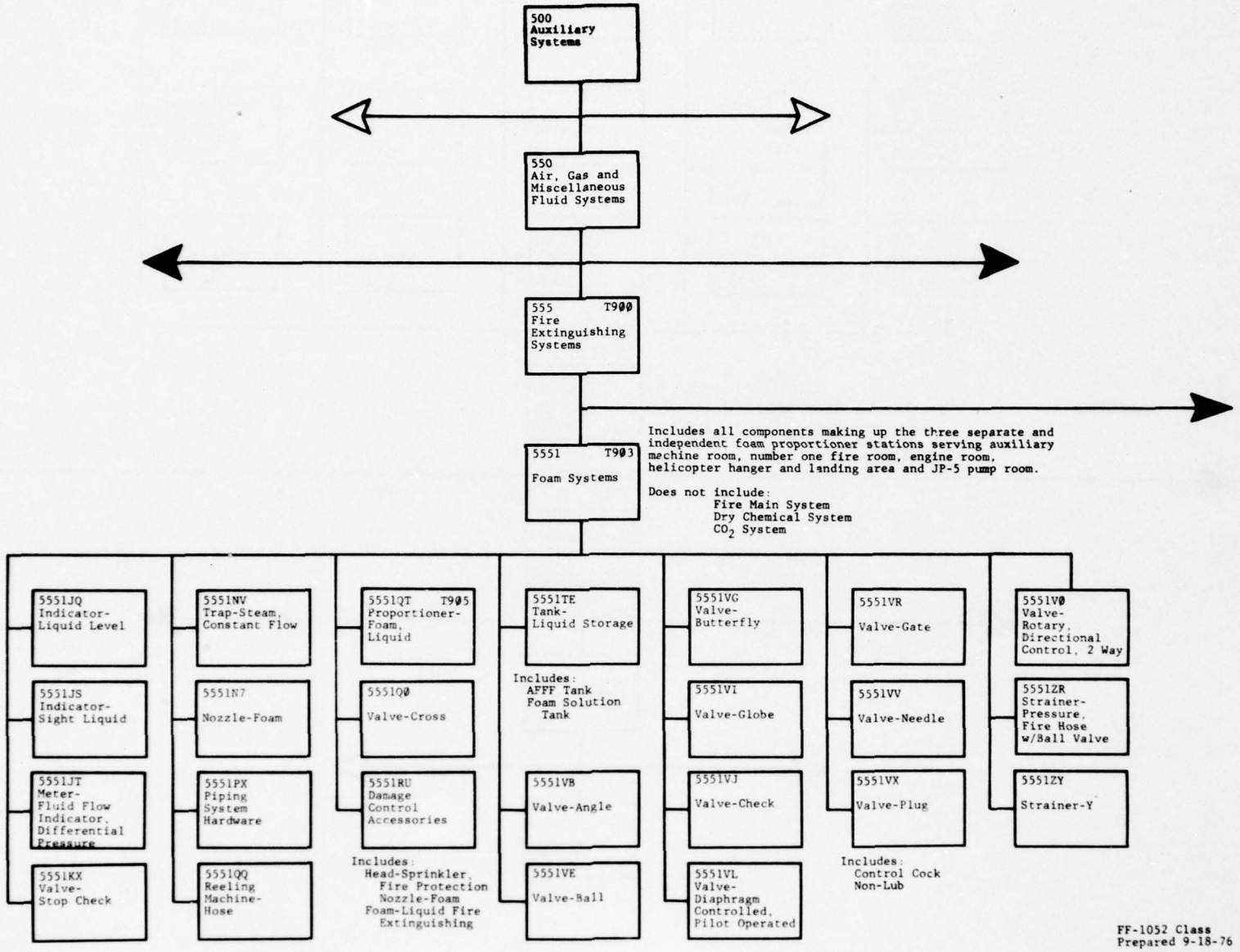


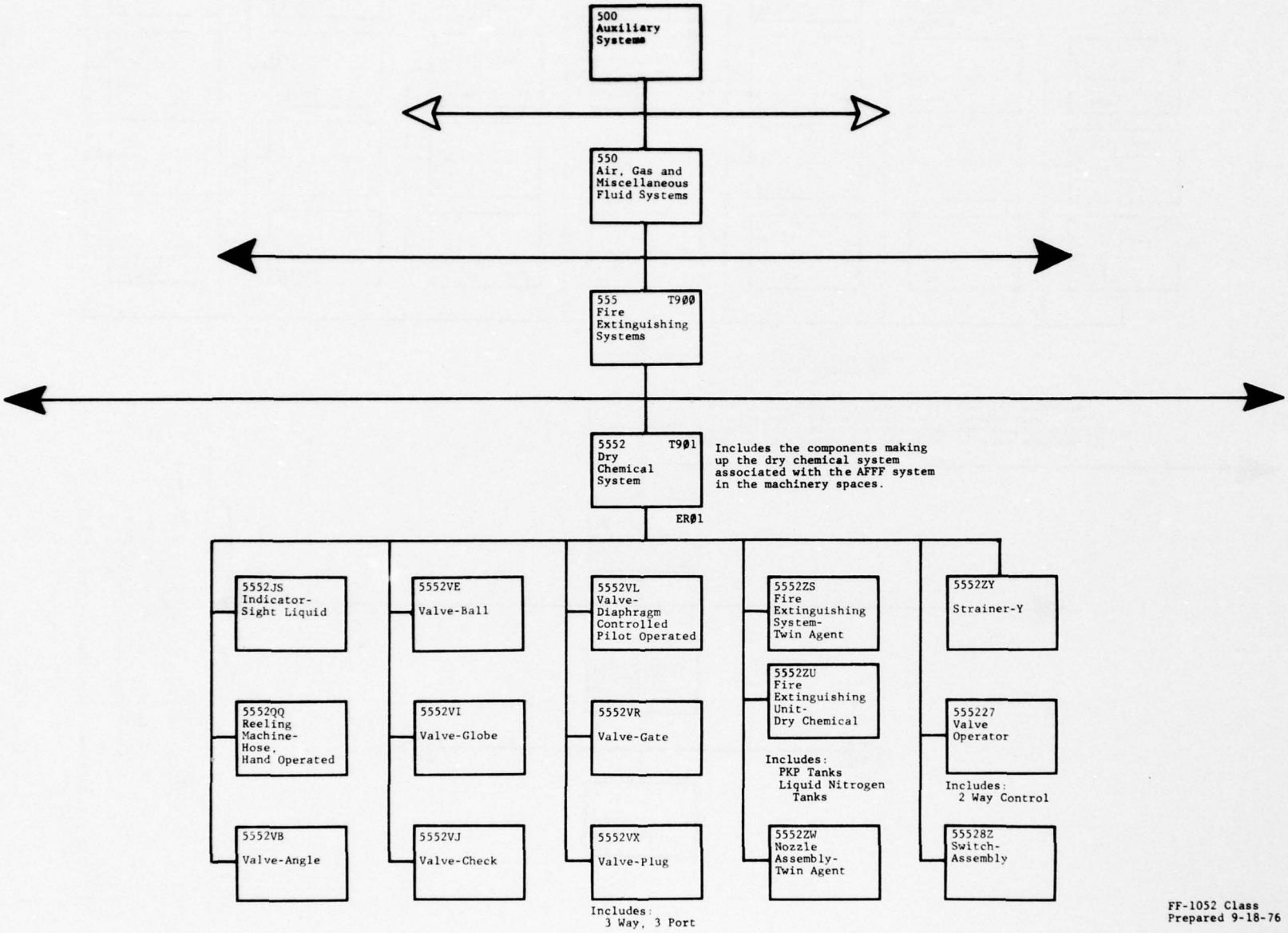
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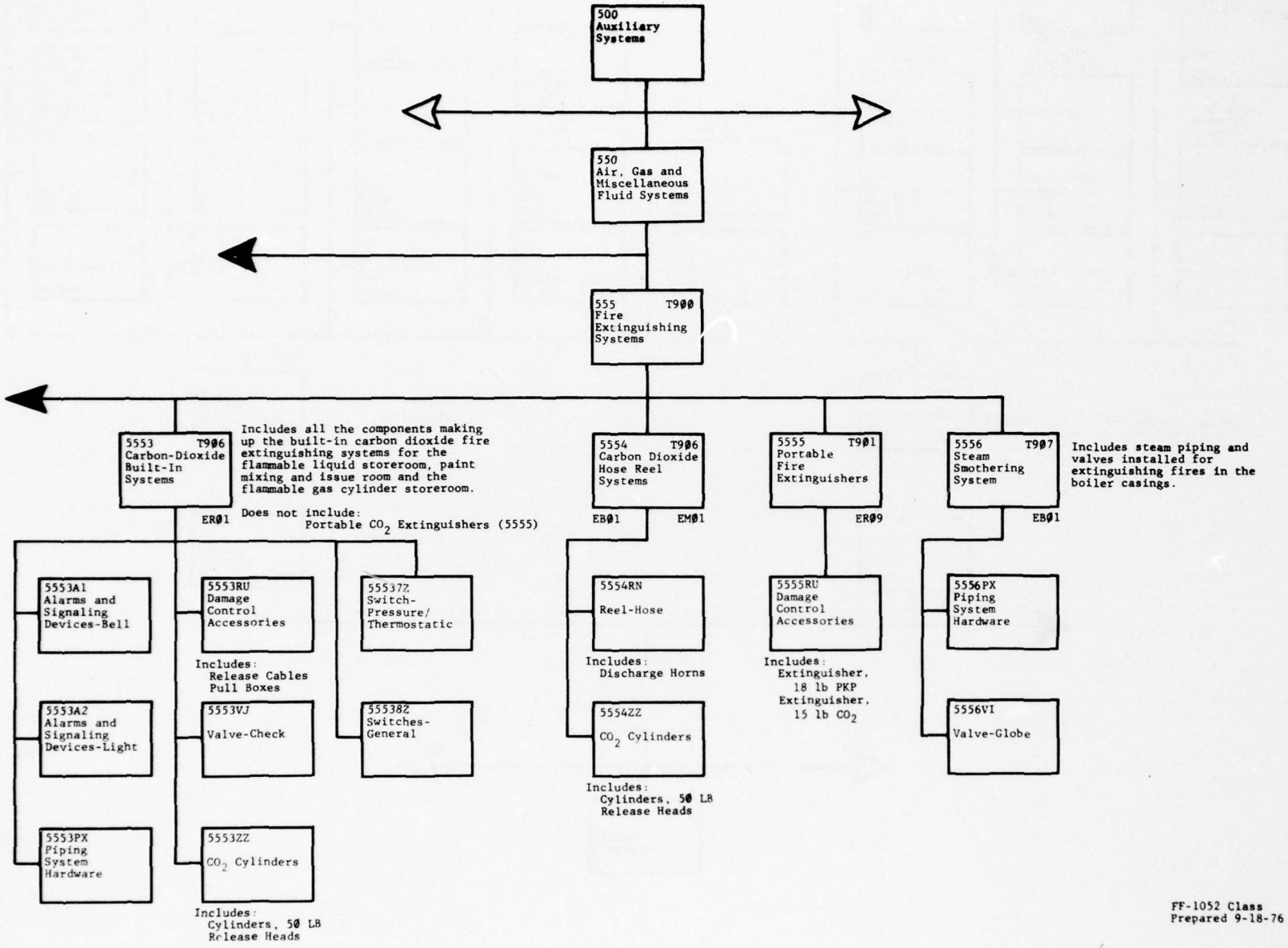
FF-1052 Class
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500
Auxiliary Systems
550
Air, Gas, and Miscellaneous Fluid Systems
551 TF00
Compressed Air Systems
Does not include:
Control Air System (221)
5517
Prairie Masker Air System
Includes compressors, piping, valves and fittings making up the prairie masker air system.
5517A4
Valve-Relief
5517FK
Filter-Fluid Pressure
5517FV
Filter-Air, Dry Elements
5517GB
Indicator-Liquid Quantity
5517GC
Gage-Pressure
5517JH
Cell-Salinity
5517JZ
Instruments-Miscellaneous
5517JR
Indicator-Sight, Liquid, Flat
5517JT
Indicator-Meter, Differential Pressure
5517KX
Valve-Stop Check
5517M7
Motor-AC
5517NR
Valve-Pressure Regulating, High Pressure Air
5517PX
Piping System Hardware
5517TE
Tank-Liquid Storage
Includes:
Main and Emergency Lube Water Tanks
5517UX
Relay-Electrical
5517VB
Valve-Angle
5517VI
Valve-Globe
5517VJ
Valve-Check
5517VK
Valve-Special Combination Relief and Reduction
5517VL
Valve-Diaphragm Controlled Pilot Operated
5517VR
Valve-Gate
5517VV
Valve-Needle
Includes:
Globe
5517V1
Valve-Exhaust and Relief
5517V6
Valve-Solenoid
5517YR
Turbine-Steam, Auxiliary
5517ZY
Strainer-Sediment
551705
Compressor-Centrifugal, Air, Low Pressure
551747
Controller/Starter-AC
551767
Cooler-Fluid
55177Z
Switch-Pressure/Thermostatic
551773
Pump-Centrifugal
55178Z
Switches-General
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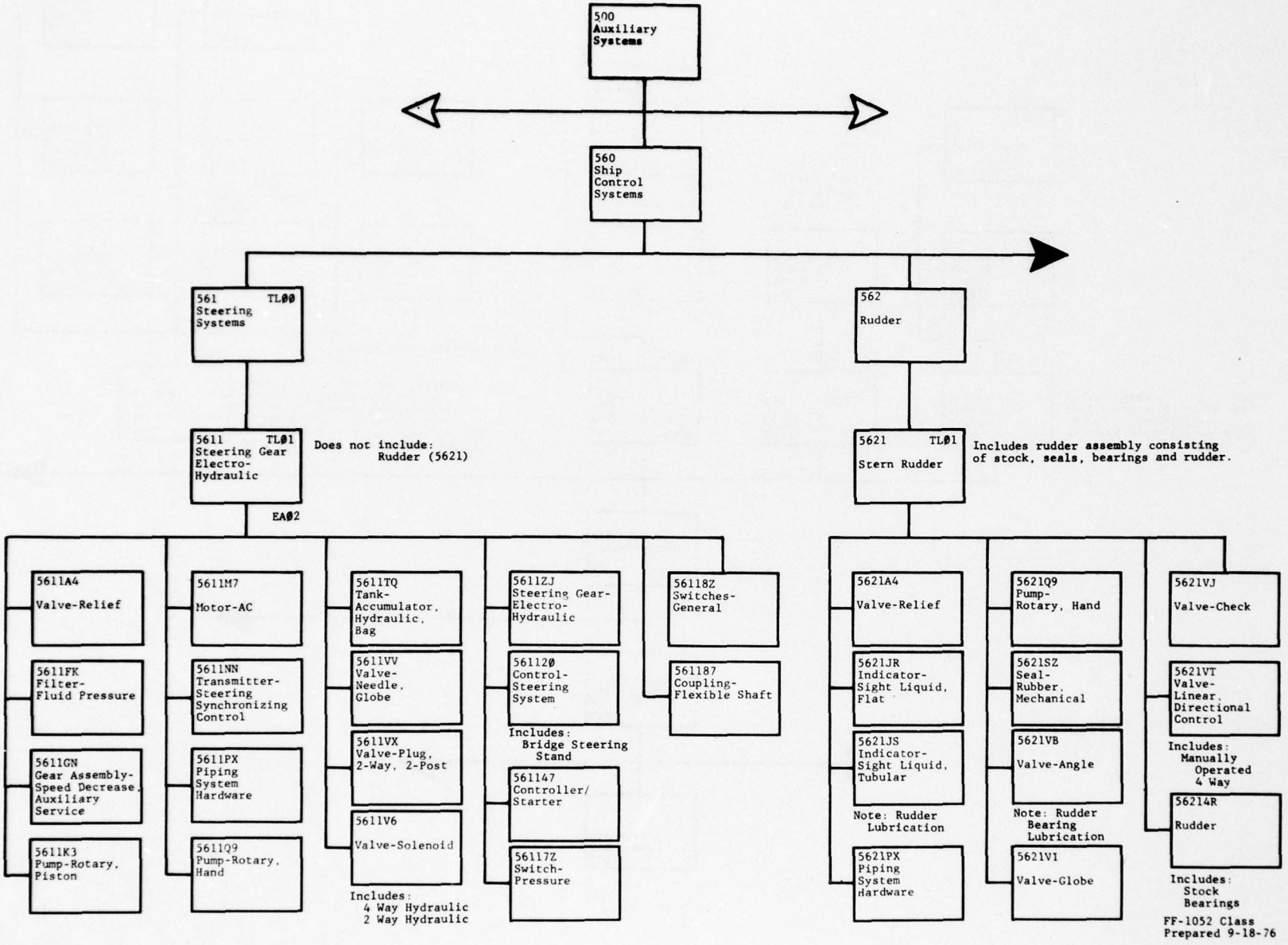

500
Auxiliary
Systems
550
Air, Gas and
Miscellaneous
Fluid Systems
555 T900
Fire
Extinguishing
Systems
5551 T903
Foam Systems
Includes all components making up the three separate and independent foam proportioner stations serving auxiliary machine room, number one fire room, engine room, helicopter hanger and landing area and JP-5 pump room.
Does not include:
Fire Main System
Dry Chemical System
CO_2 System
5551JQ
Indicator-
Liquid Level
5551JS
Indicator-
Sight Liquid
5551JT
Meter-
Fluid Flow
Indicator,
Differential
Pressure
5551KX
Valve-
Stop Check
5551NV
Trap-Steam,
Constant Flow
5551N7
Nozzle-Foam
5551PX
Piping
System
Hardware
5551QQ
Reeling
Machine-
Hose
5551QT T905
Proportioner-
Foam,
Liquid
5551Q0
Valve-Cross
5551RU
Damage
Control
Accessories
Includes:
Head-Sprinkler,
Fire Protection
Nozzle-Foam
Foam-Liquid Fire
Extinguishing
5551TE
Tank-
Liquid Storage
Includes:
AFFF Tank
Foam Solution
Tank
5551VB
Valve-Angle
5551VE
Valve-Ball
5551VG
Valve-
Butterfly
5551VI
Valve-Globe
5551VJ
Valve-Check
5551VL
Valve-
Diaphragm
Controlled,
Pilot Operated
5551VR
Valve-Gate
5551VV
Valve-Needle
5551VX
Valve-Plug
Includes:
Control Cock
Non-Lub
5551V0
Valve-
Rotary,
Directional
Control, 2 Way
5551ZR
Strainer-
Pressure,
Fire Hose
w/Ball Valve
5551ZY
Strainer-Y
FF-1052 Class
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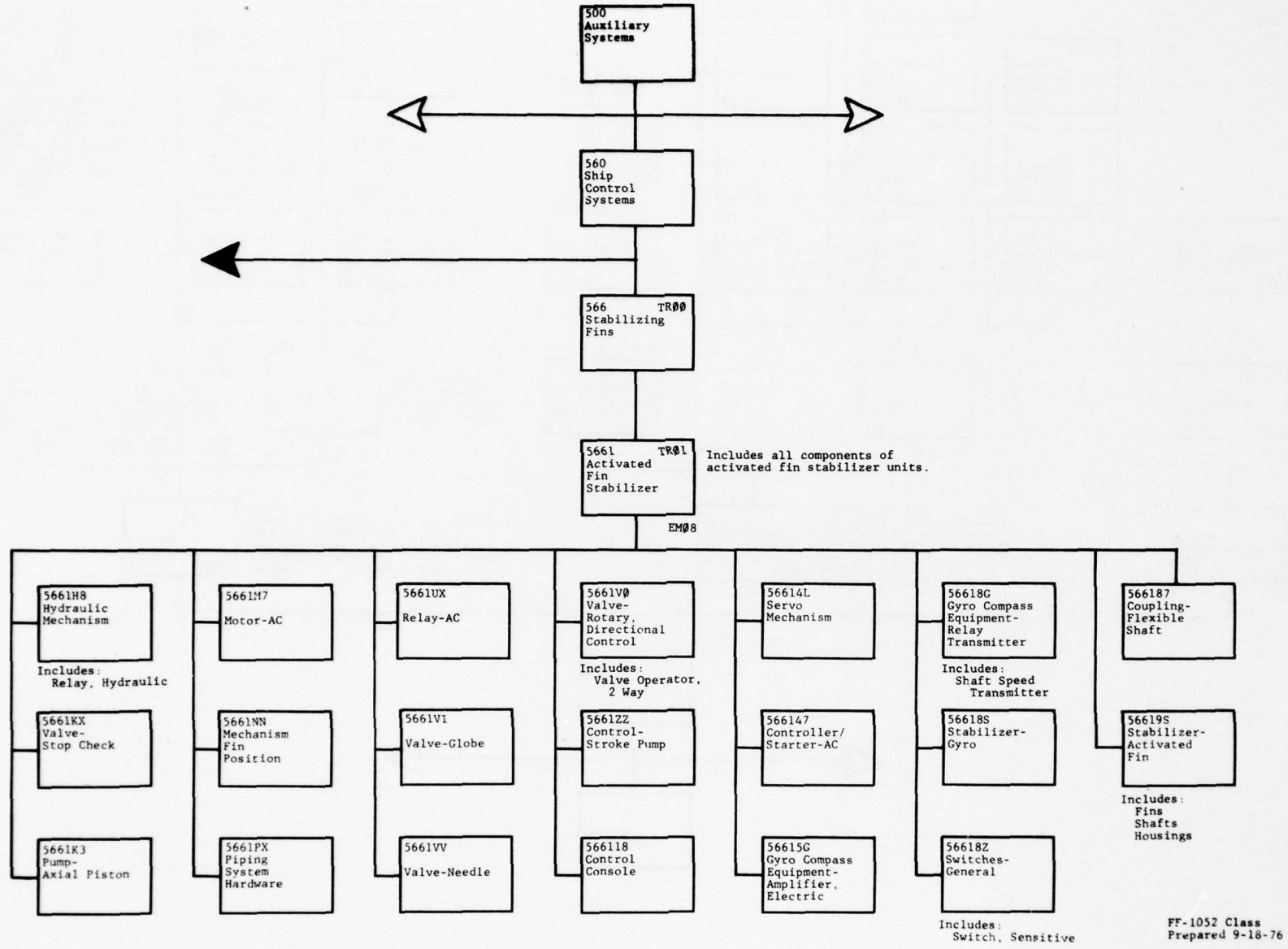


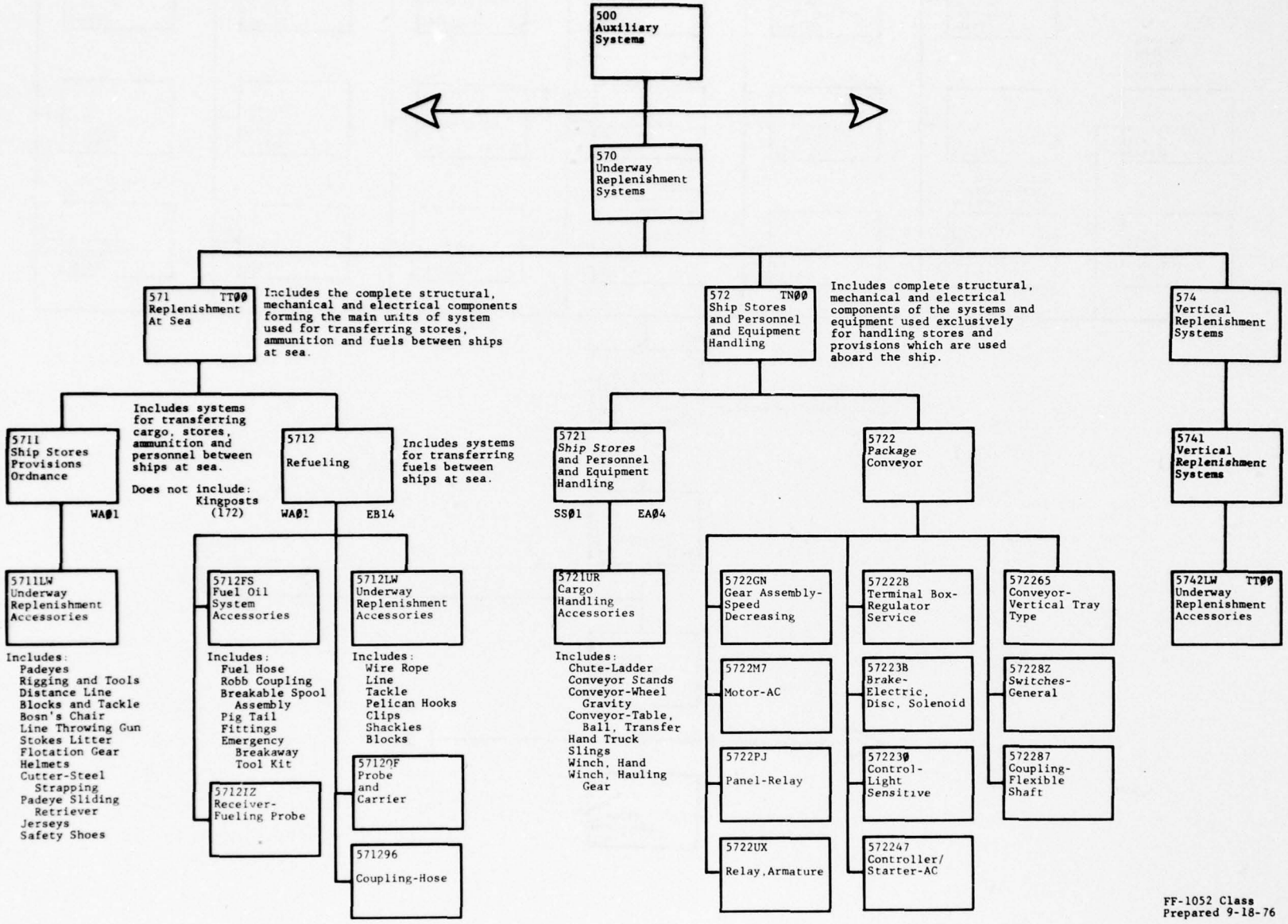
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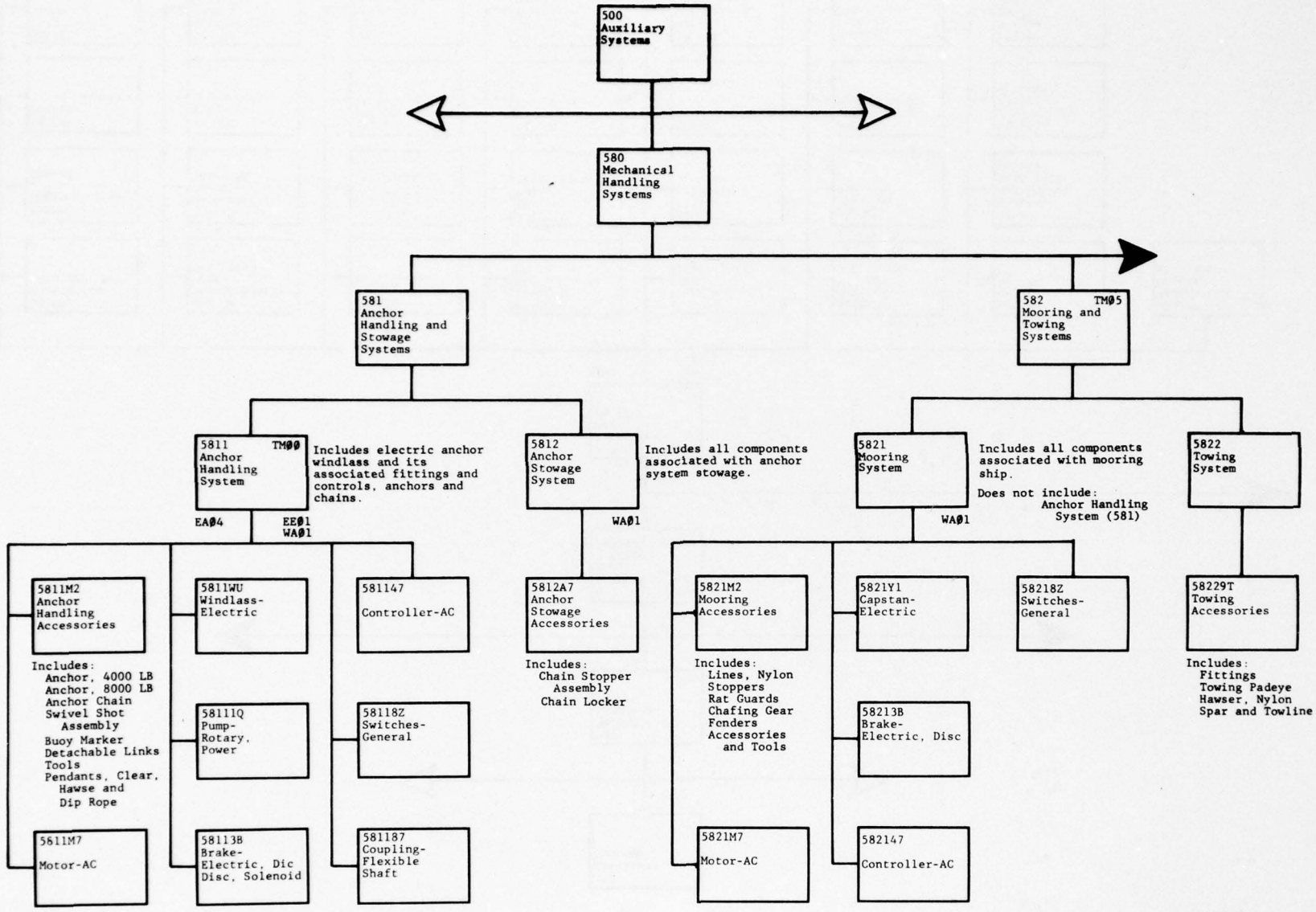


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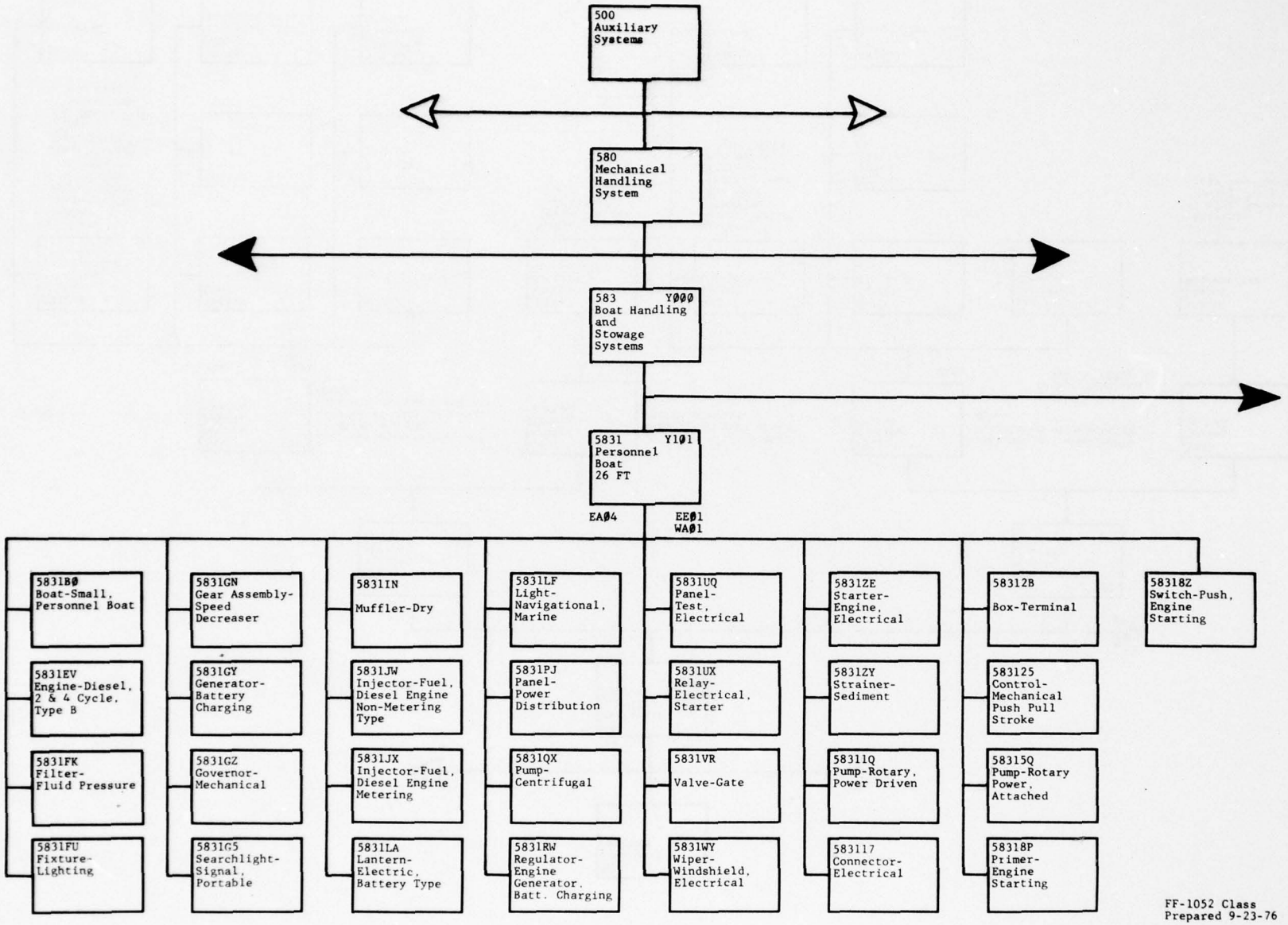

500
Auxiliary Systems
560
Ship Control Systems
561 TL00
Steering Systems
562
Rudder
5611 TL01
Steering Gear Electro-Hydraulic
Does not include:
Rudder (5621)
EA02
5621 TL01
Stern Rudder
Includes rudder assembly consisting of stock, seals, bearings and rudder.
5611A4
Valve-Relief
5611FK
Filter-Fluid Pressure
5611GN
Gear Assembly-Speed Decrease, Auxiliary Service
5611K3
Pump-Rotary, Piston
5611M7
Motor-AC
5611NN
Transmitter-Steering Synchronizing Control
5611PX
Piping System Hardware
5611Q9
Pump-Rotary, Hand
5611TQ
Tank-Accumulator, Hydraulic, Bag
5611VV
Valve-Needle, Globe
5611VX
Valve-Plug, 2-Way, 2-Post
5611V6
Valve-Solenoid
Includes:
4 Way Hydraulic
2 Way Hydraulic
5611ZJ
Steering Gear-Electro-Hydraulic
561120
Control-Steering System
Includes:
Bridge Steering Stand
561147
Controller/Starter
56117Z
Switch-Pressure
56118Z
Switches-General
561187
Coupling-Flexible Shaft
5621A4
Valve-Relief
5621JR
Indicator-Sight Liquid, Flat
5621JS
Indicator-Sight Liquid, Tubular
Note: Rudder Lubrication
5621PX
Piping System Hardware
5621Q9
Pump-Rotary, Hand
5621SZ
Seal-Rubber, Mechanical
5621VB
Valve-Angle
Note: Rudder Bearing Lubrication
5621VI
Valve-Globe
5621VJ
Valve-Check
5621VT
Valve-Linear, Directional Control
Includes:
Manually Operated 4 Way
56214R
Rudder
Includes:
Stock Bearings
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Prepared 9-18-76


500
Auxiliary Systems
560
Ship Control Systems
566 TR00
Stabilizing Fins
5661 TR01
Activated Fin Stabilizer
EM08
Includes all components of activated fin stabilizer units.
5661H8
Hydraulic Mechanism
Includes:
Relay, Hydraulic
5661KX
Valve-Stop Check
5661K3
Pump-Axial Piston
5661M7
Motor-AC
5661NN
Mechanism Fin Position
5661PX
Piping System Hardware
5661UX
Relay-AC
5661V1
Valve-Globe
5661VV
Valve-Needle
5661V0
Valve-Rotary, Directional Control
Includes:
Valve Operator, 2 Way
5661ZZ
Control-Stroke Pump
566118
Control Console
56614L
Servo Mechanism
566147
Controller/Starter-AC
56615G
Gyro Compass Equipment-Amplifier, Electric
56618G
Gyro Compass Equipment-Relay Transmitter
Includes:
Shaft Speed Transmitter
56618S
Stabilizer-Gyro
56618Z
Switches-General
Includes:
Switch, Sensitive
566187
Coupling-Flexible Shaft
56619S
Stabilizer-Activated Fin
Includes:
Fins
Shafts
Housings
FF-1052 Class
Prepared 9-18-76

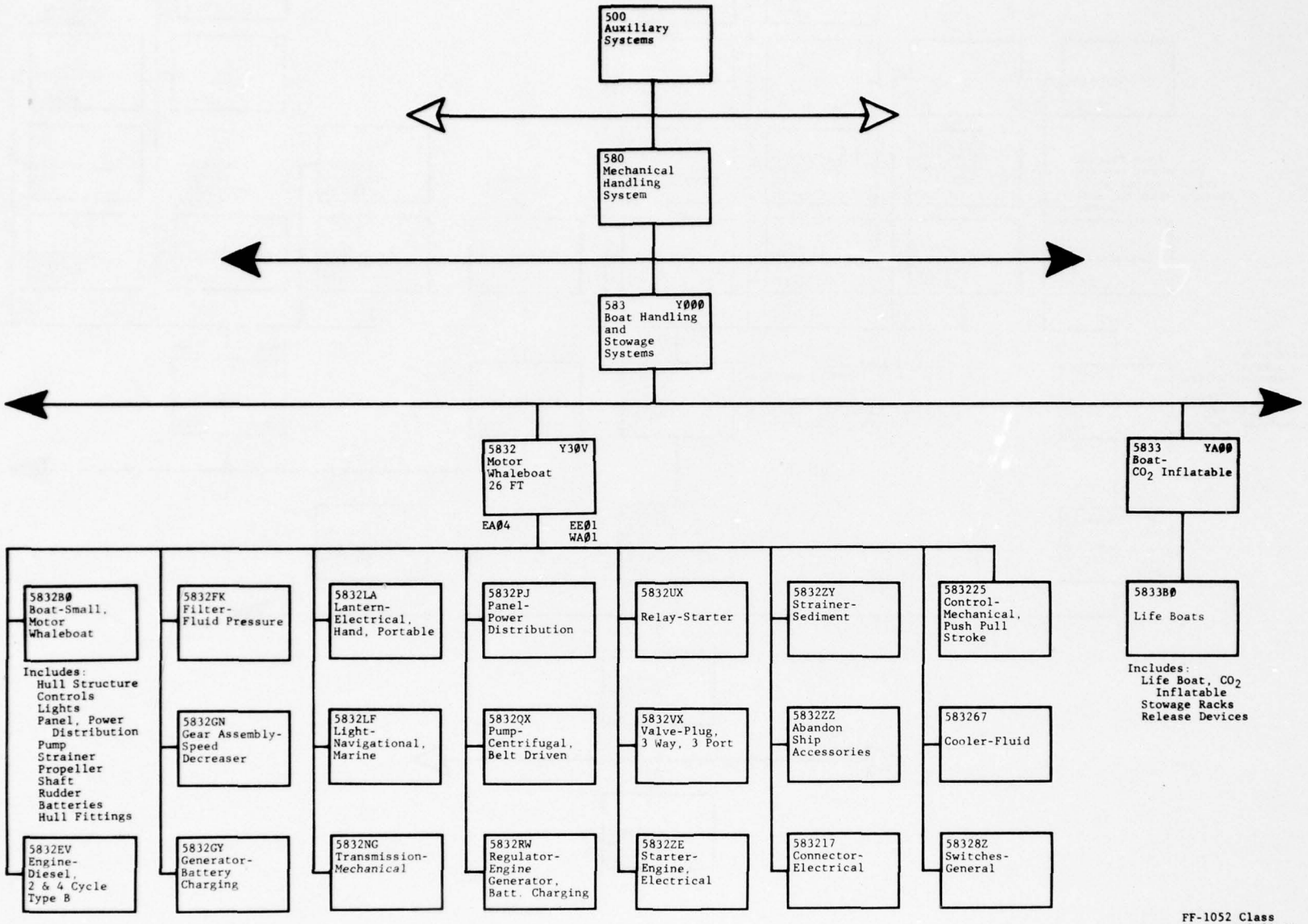

500
Auxiliary Systems
570
Underway Replenishment Systems
571 TT00
Replenishment At Sea
Includes the complete structural, mechanical and electrical components forming the main units of system used for transferring stores, ammunition and fuels between ships at sea.
572 TN00
Ship Stores and Personnel and Equipment Handling
Includes complete structural, mechanical and electrical components of the systems and equipment used exclusively for handling stores and provisions which are used aboard the ship.
574
Vertical Replenishment Systems
5711
Ship Stores Provisions Ordnance
WA01
Includes systems for transferring cargo, stores, ammunition and personnel between ships at sea.
Does not include: Kingposts (172)
5712
Refueling
WA01
EB14
Includes systems for transferring fuels between ships at sea.
5721
Ship Stores and Personnel and Equipment Handling
SS01
EA04
5722
Package Conveyor
5741
Vertical Replenishment Systems
5711LW
Underway Replenishment Accessories
Includes:
Padeyes
Rigging and Tools
Distance Line
Blocks and Tackle
Bosn's Chair
Line Throwing Gun
Stokes Litter
Flotation Gear
Helmets
Cutter-Steel Strapping
Padeye Sliding Retriever
Jerseys
Safety Shoes
5712FS
Fuel Oil System Accessories
Includes:
Fuel Hose
Robb Coupling
Breakable Spool Assembly
Pig Tail
Fittings
Emergency Breakaway Tool Kit
5712IZ
Receiver-Fueling Probe
5712LW
Underway Replenishment Accessories
Includes:
Wire Rope
Line
Tackle
Pelican Hooks
Clips
Shackles
Blocks
5712QF
Probe and Carrier
571296
Coupling-Hose
5721UR
Cargo Handling Accessories
Includes:
Chute-Ladder Conveyor Stands
Conveyor-Wheel Gravity
Conveyor-Table, Ball, Transfer
Hand Truck
Slings
Winch, Hand
Winch, Hauling Gear
5722GN
Gear Assembly-Speed Decreasing
5722M7
Motor-AC
5722PJ
Panel-Relay
5722UX
Relay, Armature
57222B
Terminal Box-Regulator Service
57223B
Brake-Electric, Disc, Solenoid
57223Q
Control-Light Sensitive
572247
Controller/Starter-AC
572265
Conveyor-Vertical Tray Type
57228Z
Switches-General
572287
Coupling-Flexible Shaft
5742LW TT00
Underway Replenishment Accessories
FF-1052 Class
Prepared 9-18-76



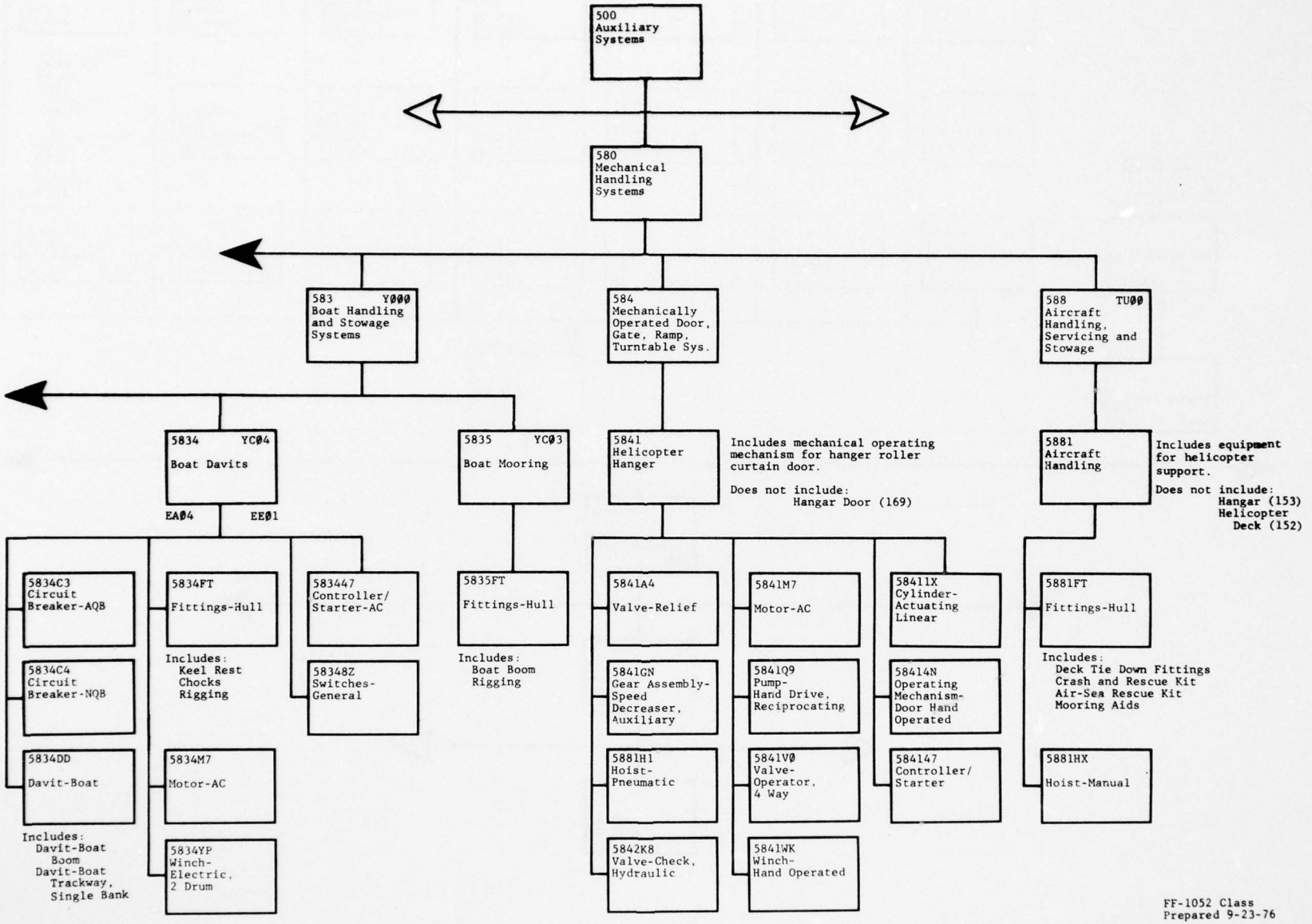
FF-1052 Class
Prepared 9-18-76



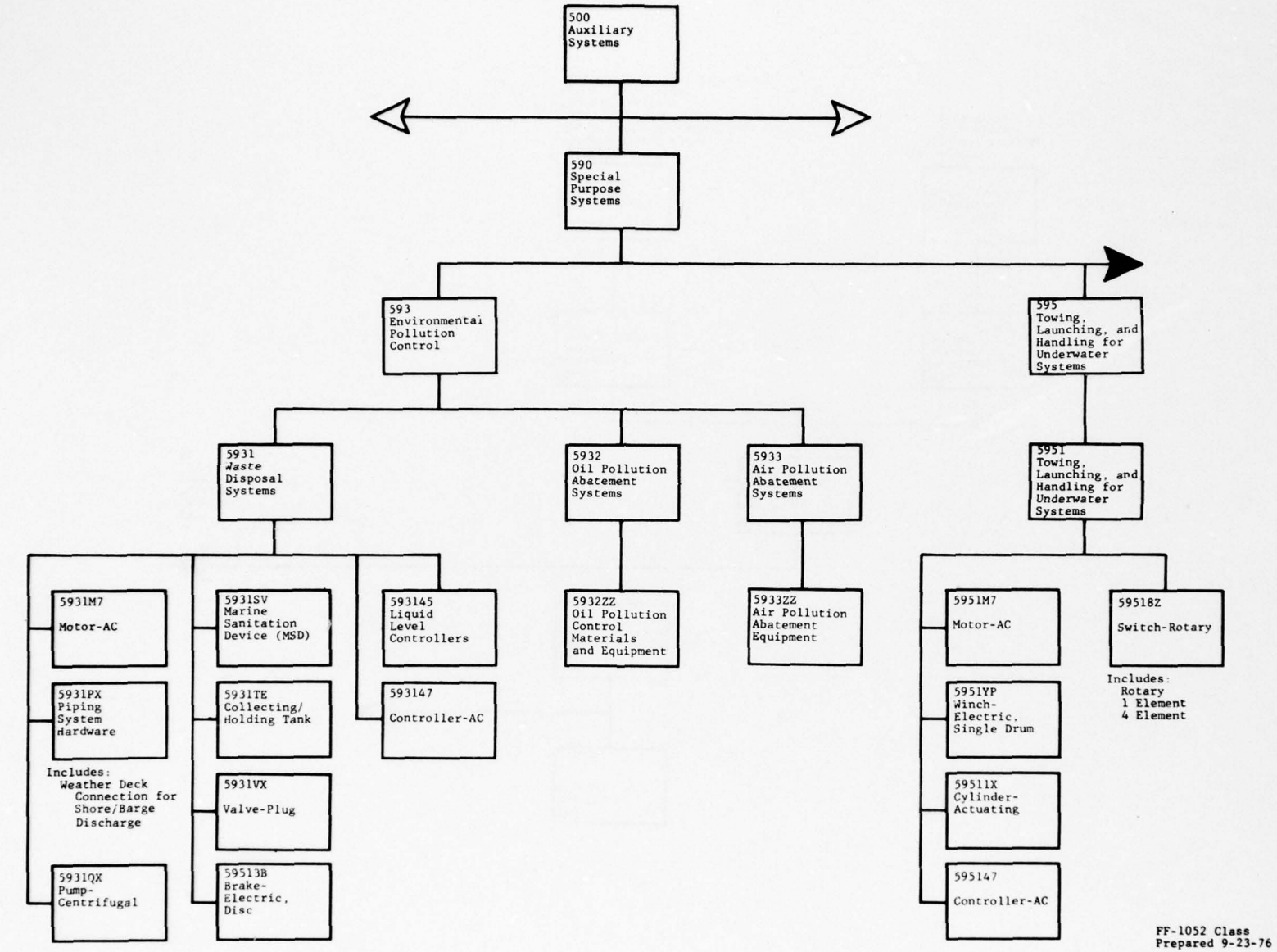
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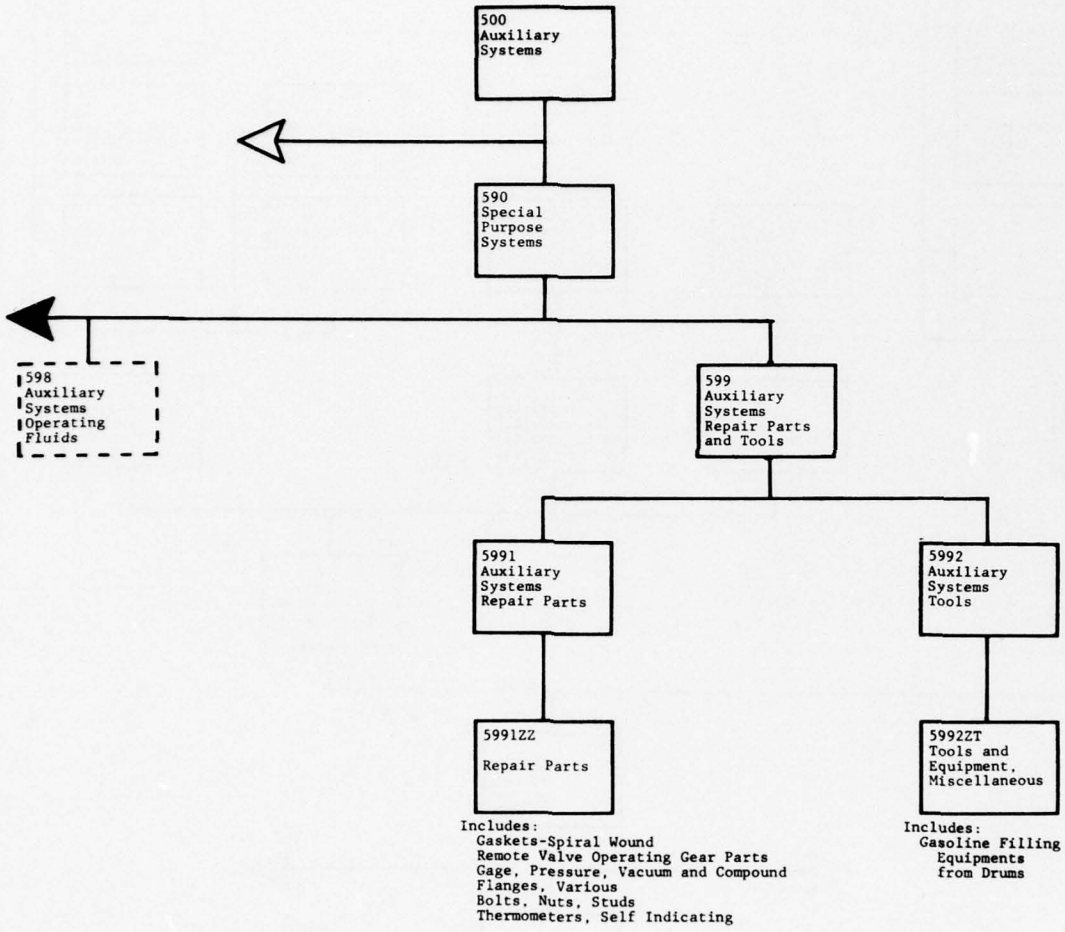
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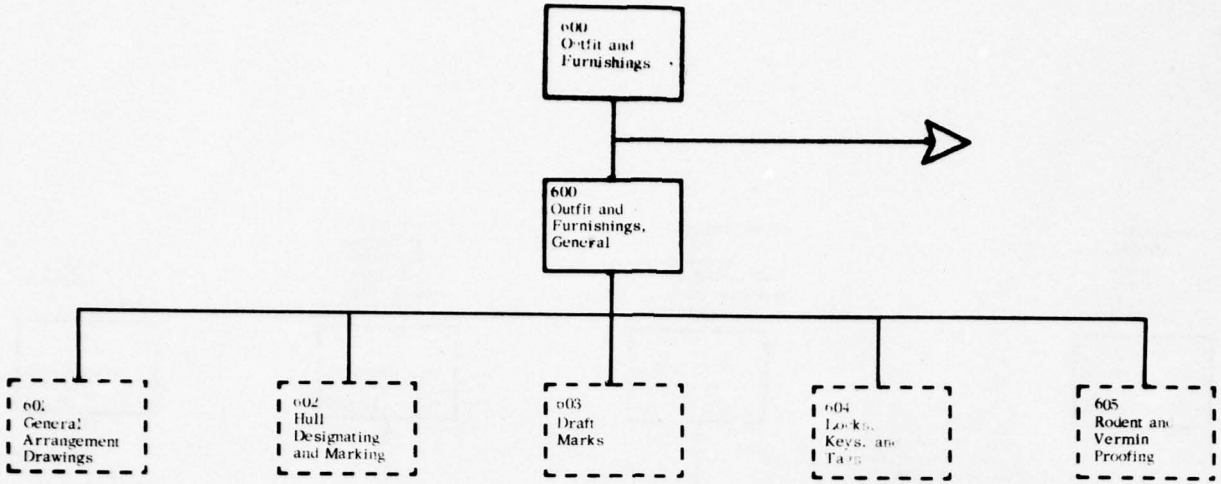
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Prepared 9-23-76



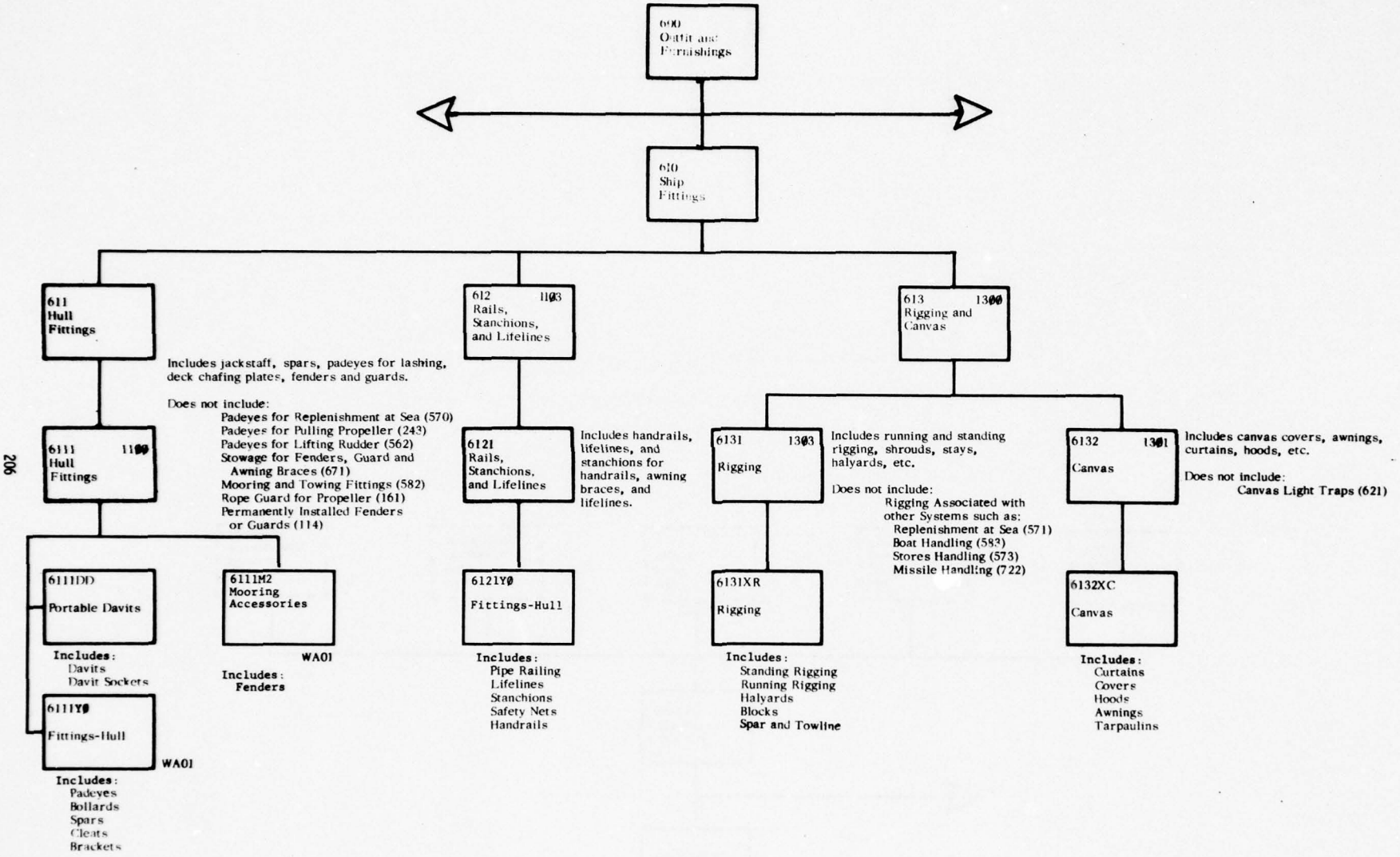
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Prepared 9-23-76



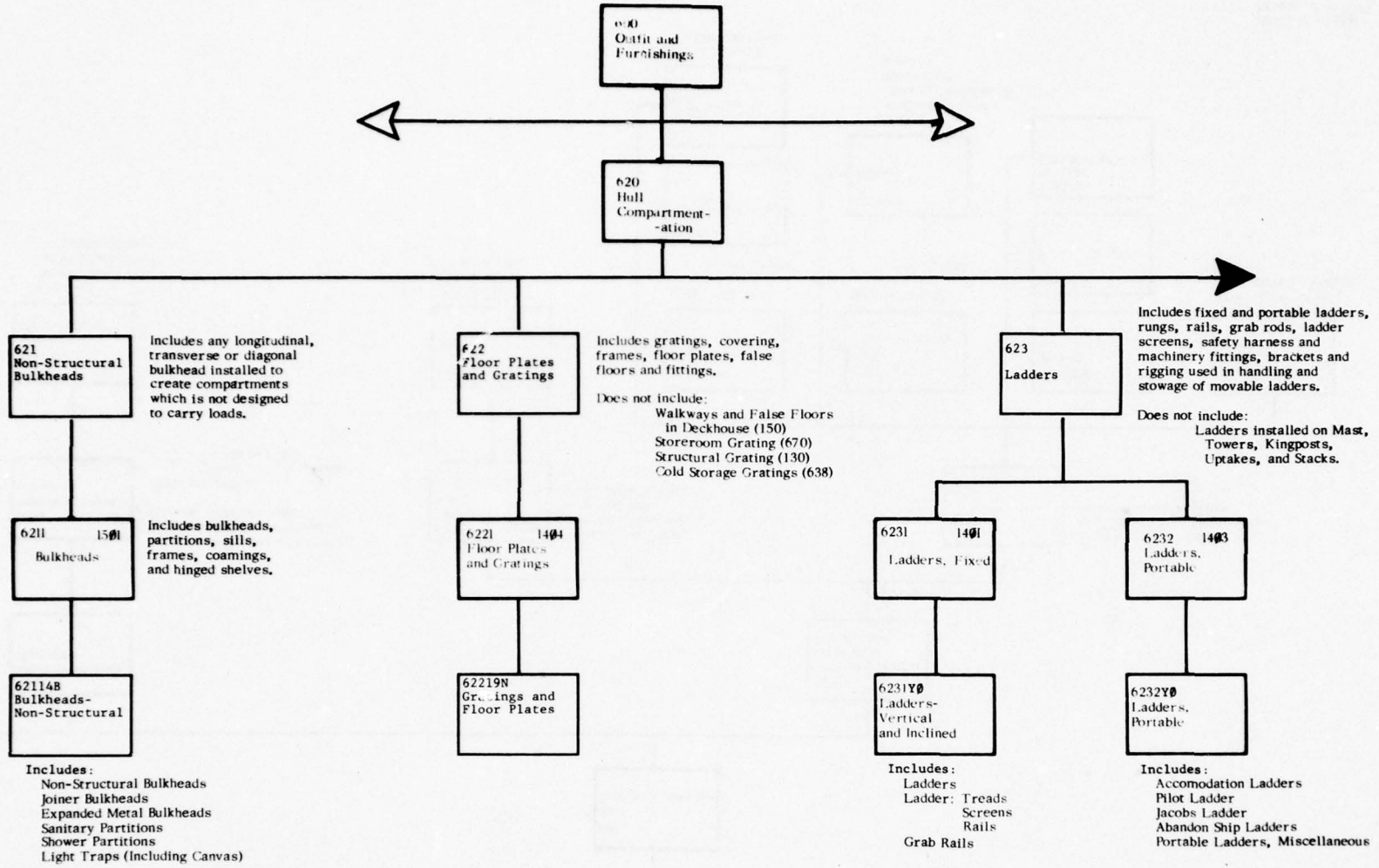
FF-1052 Class
Prepared 10-19-76



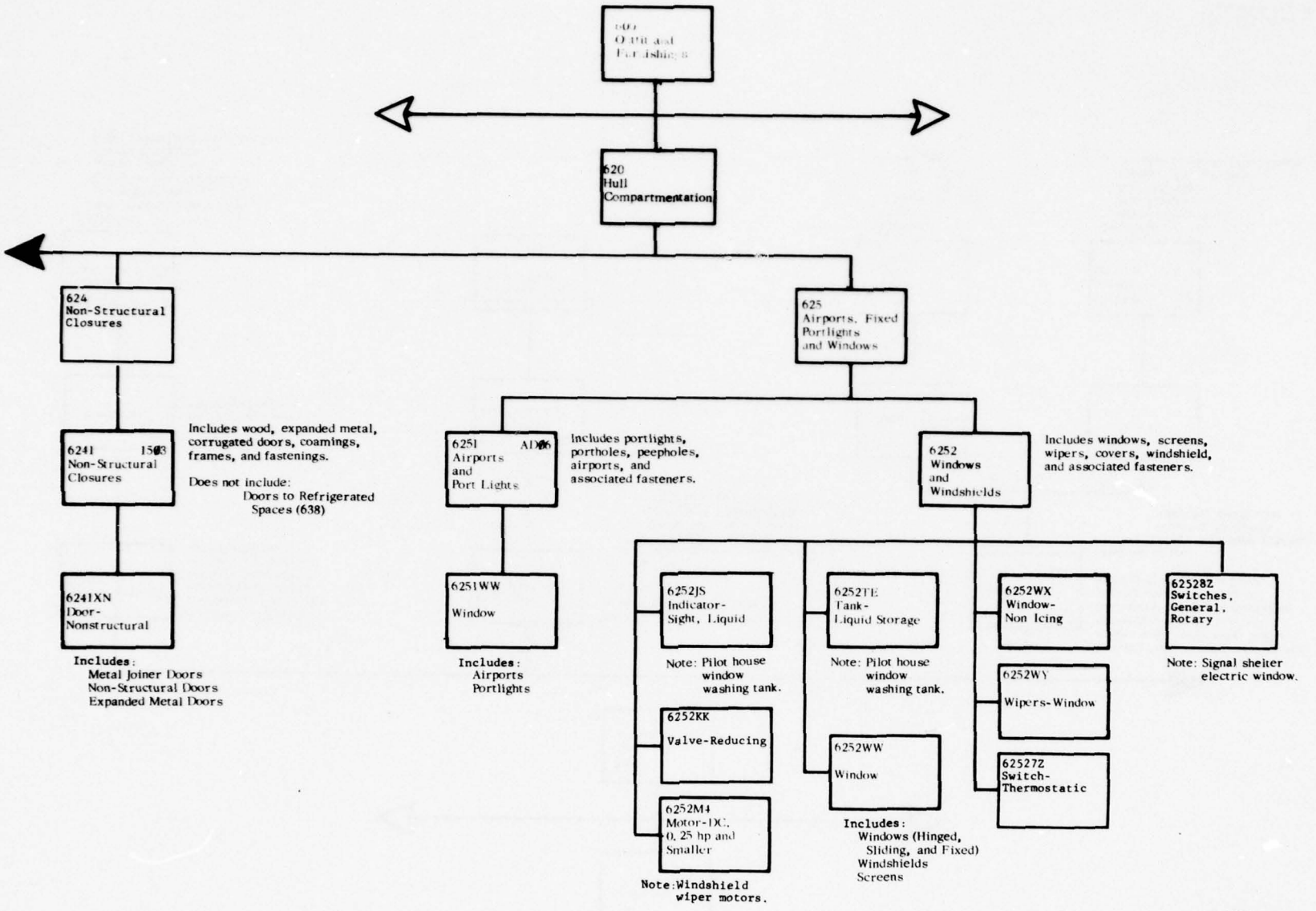
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Prepared 9-3-76



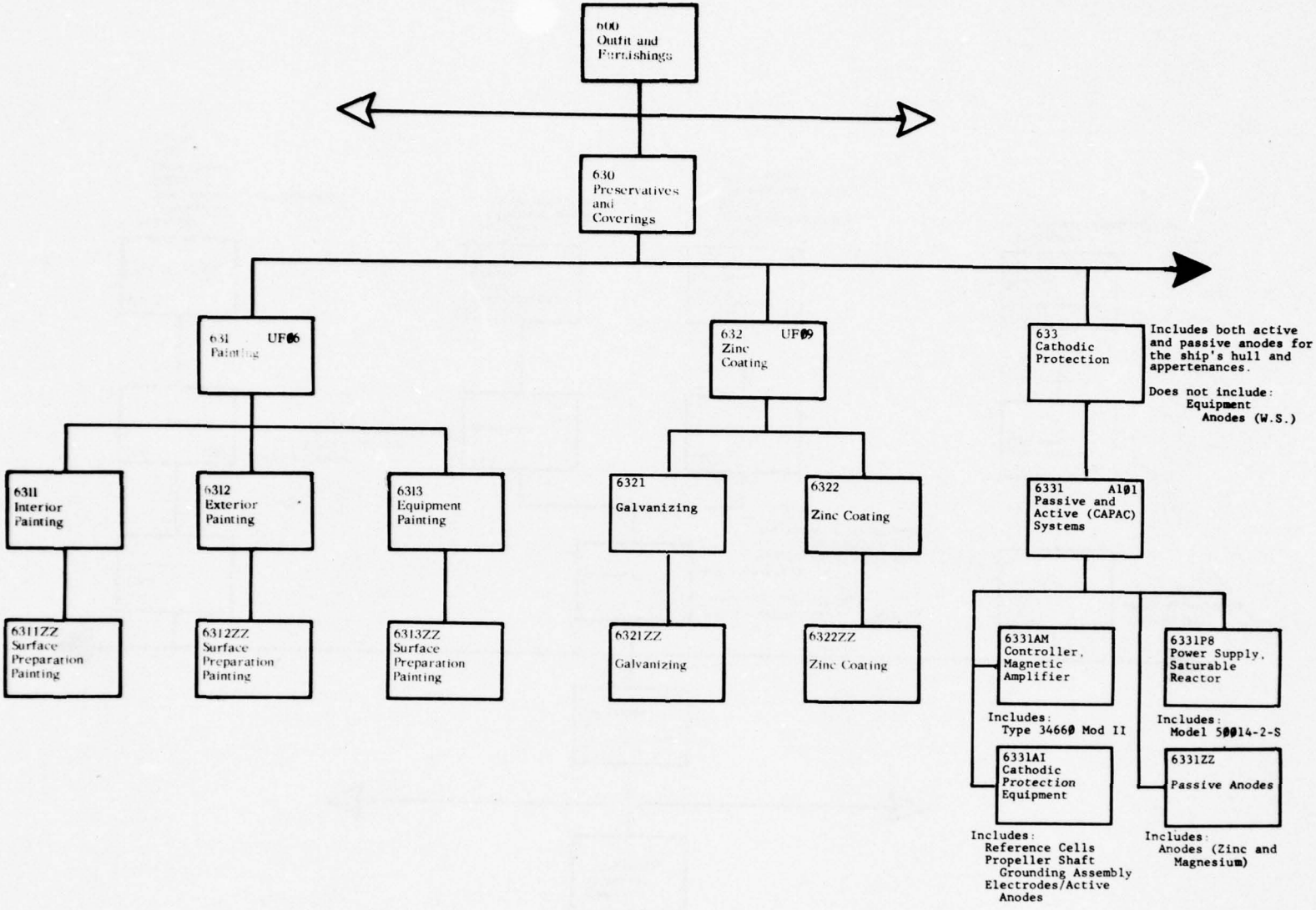
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Prepared 9-3-76



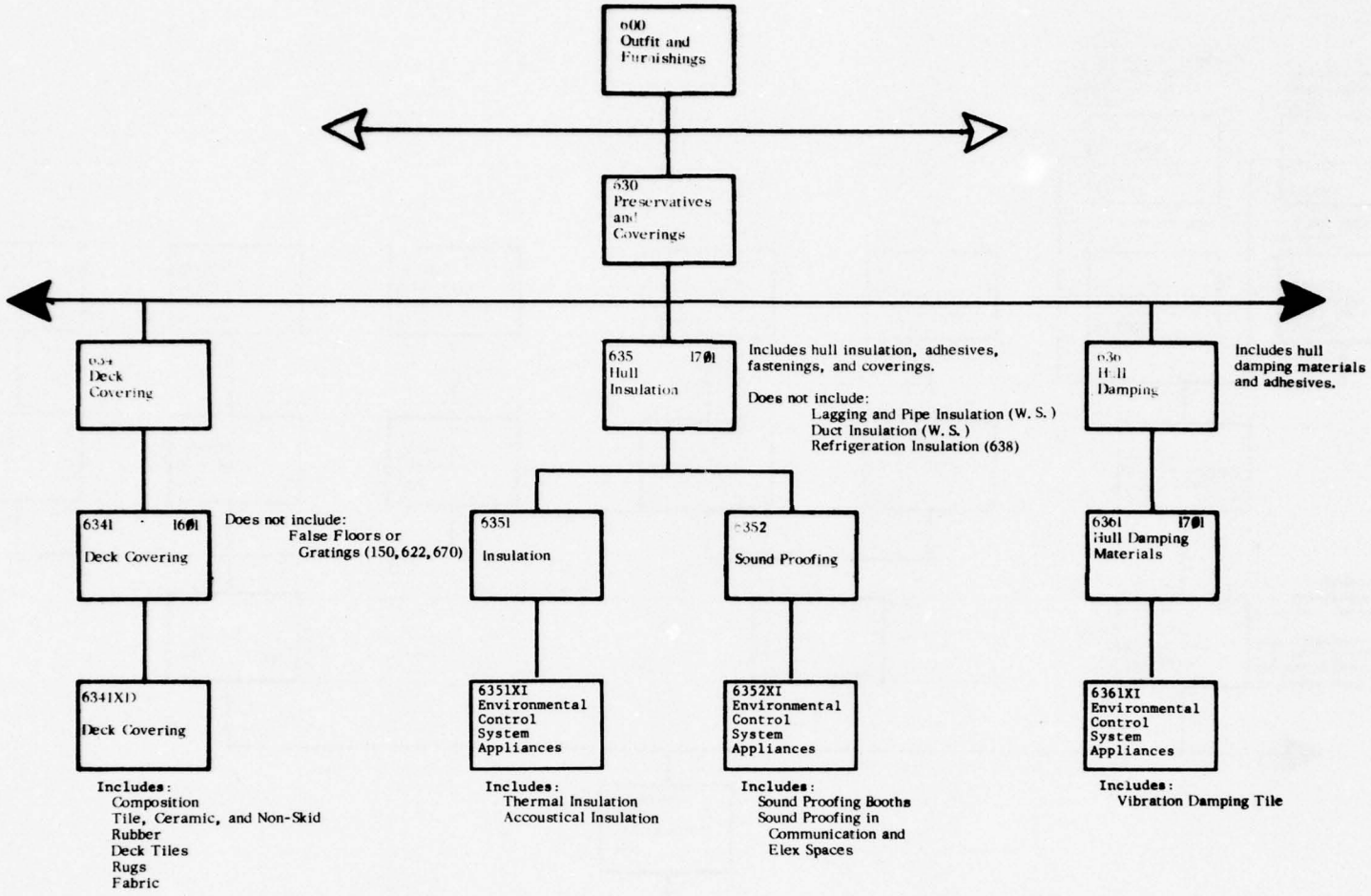
FF-1052 Class
Prepared 9-3-76



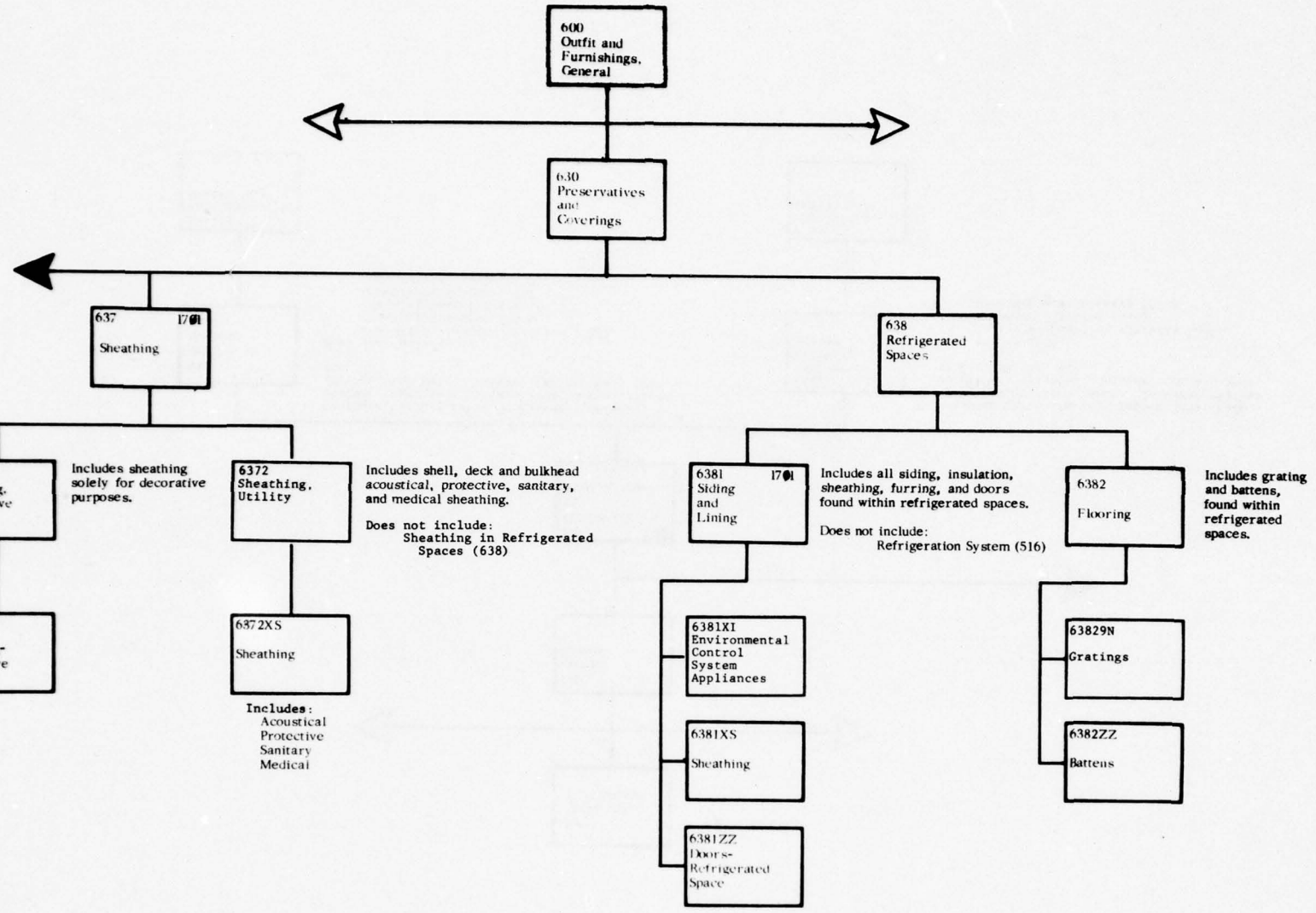
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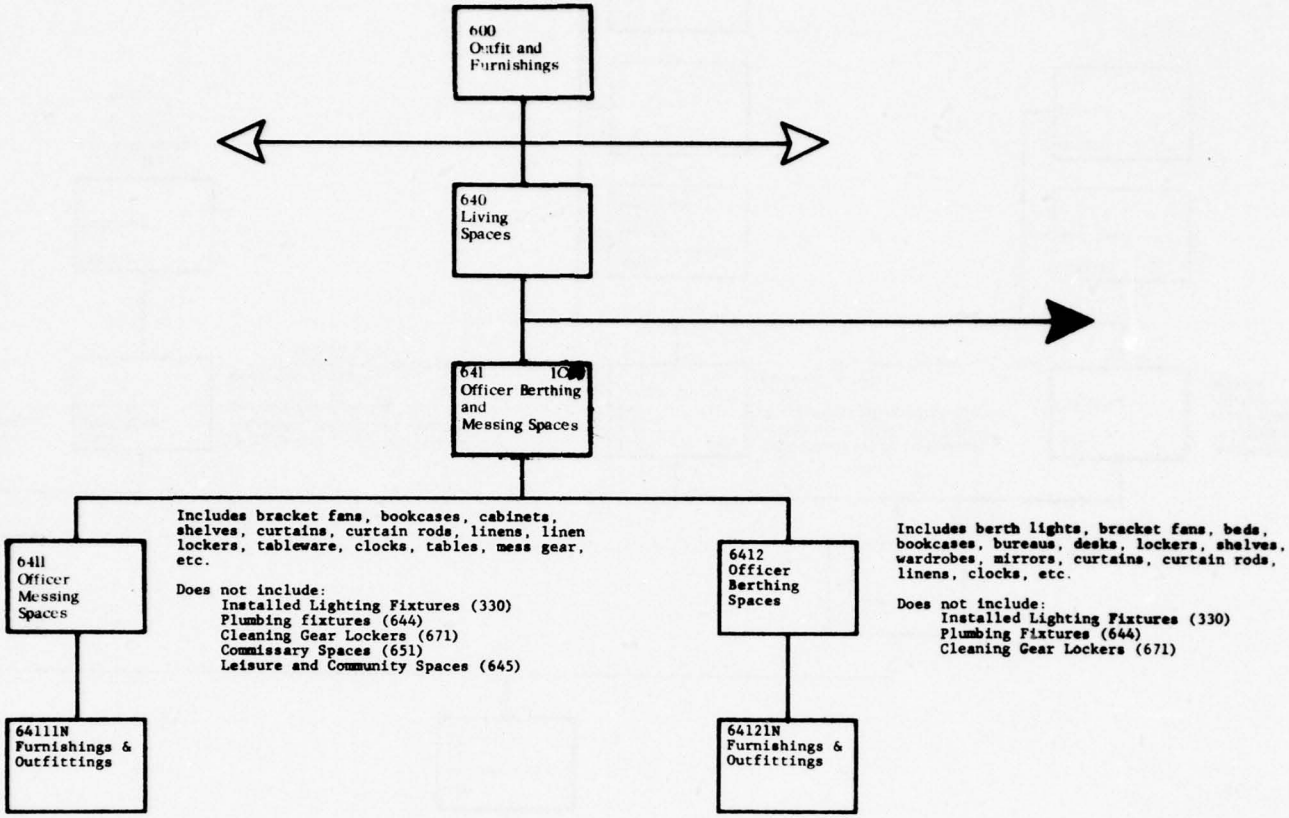
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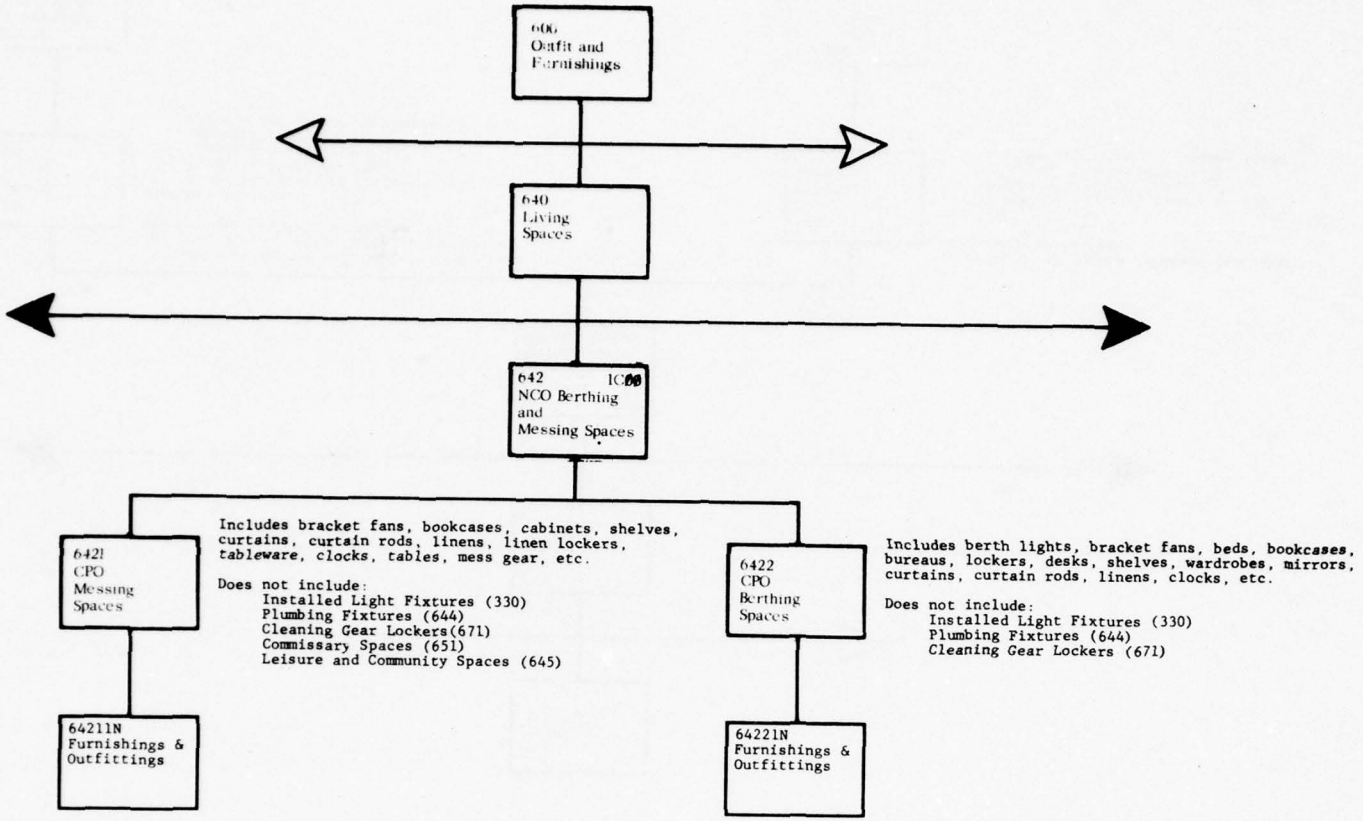


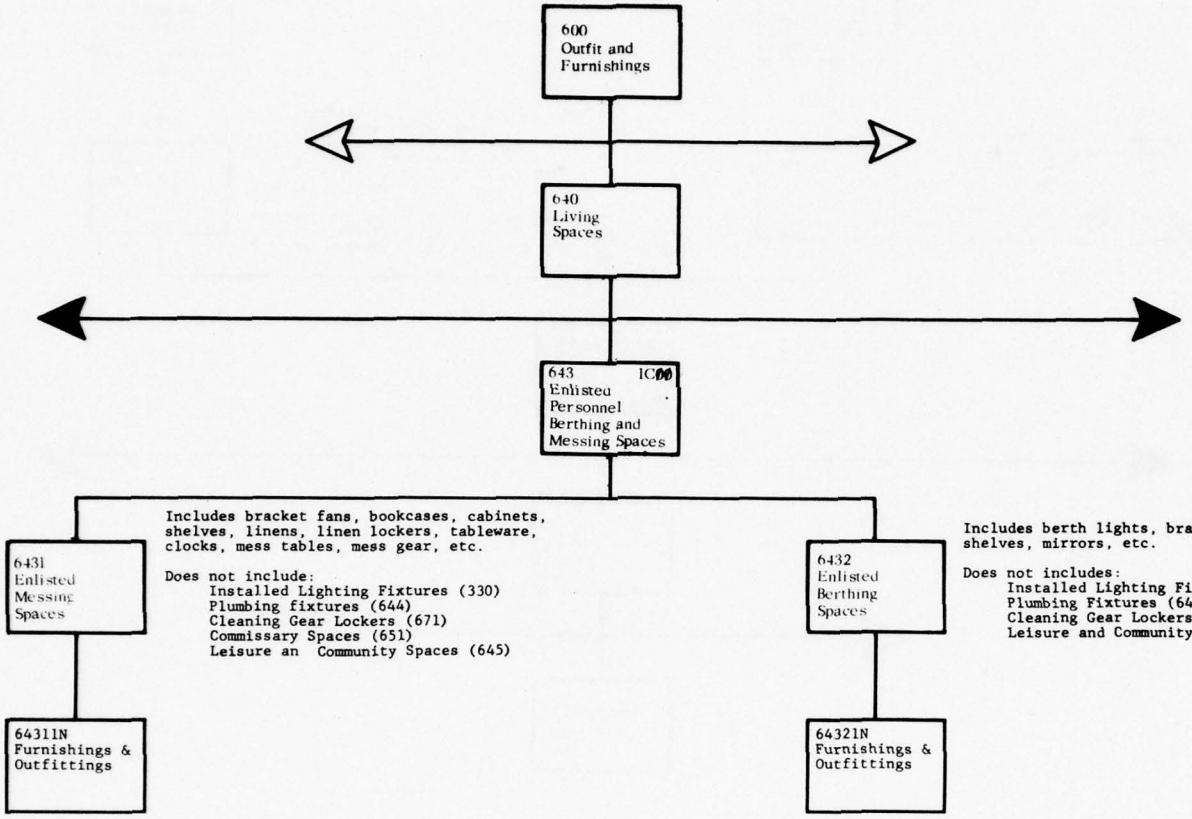
FF-1052 Class
Prepared 9-3-76



FF-1052 Class
Prepared 9-3-76


600
Outfit and
Furnishings
640
Living
Spaces
641
Officer Berthing
and
Messing Spaces
6411
Officer
Messing
Spaces
64111N
Furnishings &
Outfittings
Includes bracket fans, bookcases, cabinets, shelves, curtains, curtain rods, linens, linen lockers, tableware, clocks, tables, mess gear, etc.
Does not include:
Installed Lighting Fixtures (330)
Plumbing fixtures (644)
Cleaning Gear Lockers (671)
Commissary Spaces (651)
Leisure and Community Spaces (645)
6412
Officer
Berthing
Spaces
64121N
Furnishings &
Outfittings
Includes berth lights, bracket fans, beds, bookcases, bureaus, desks, lockers, shelves, wardrobes, mirrors, curtains, curtain rods, linens, clocks, etc.
Does not include:
Installed Lighting Fixtures (330)
Plumbing Fixtures (644)
Cleaning Gear Lockers (671)


606
Outfit and
Furnishings
640
Living
Spaces
642
NCO Berthing
and
Messing Spaces
6421
CPO
Messing
Spaces
64211N
Furnishings &
Outfittings
Includes bracket fans, bookcases, cabinets, shelves, curtains, curtain rods, linens, linen lockers, tableware, clocks, tables, mess gear, etc.
Does not include:
Installed Light Fixtures (330)
Plumbing Fixtures (644)
Cleaning Gear Lockers(671)
Commissary Spaces (651)
Leisure and Community Spaces (645)
6422
CPO
Berthing
Spaces
64221N
Furnishings &
Outfittings
Includes berth lights, bracket fans, beds, bookcases, bureaus, lockers, desks, shelves, wardrobes, mirrors, curtains, curtain rods, linens, clocks, etc.
Does not include:
Installed Light Fixtures (330)
Plumbing Fixtures (644)
Cleaning Gear Lockers (671)

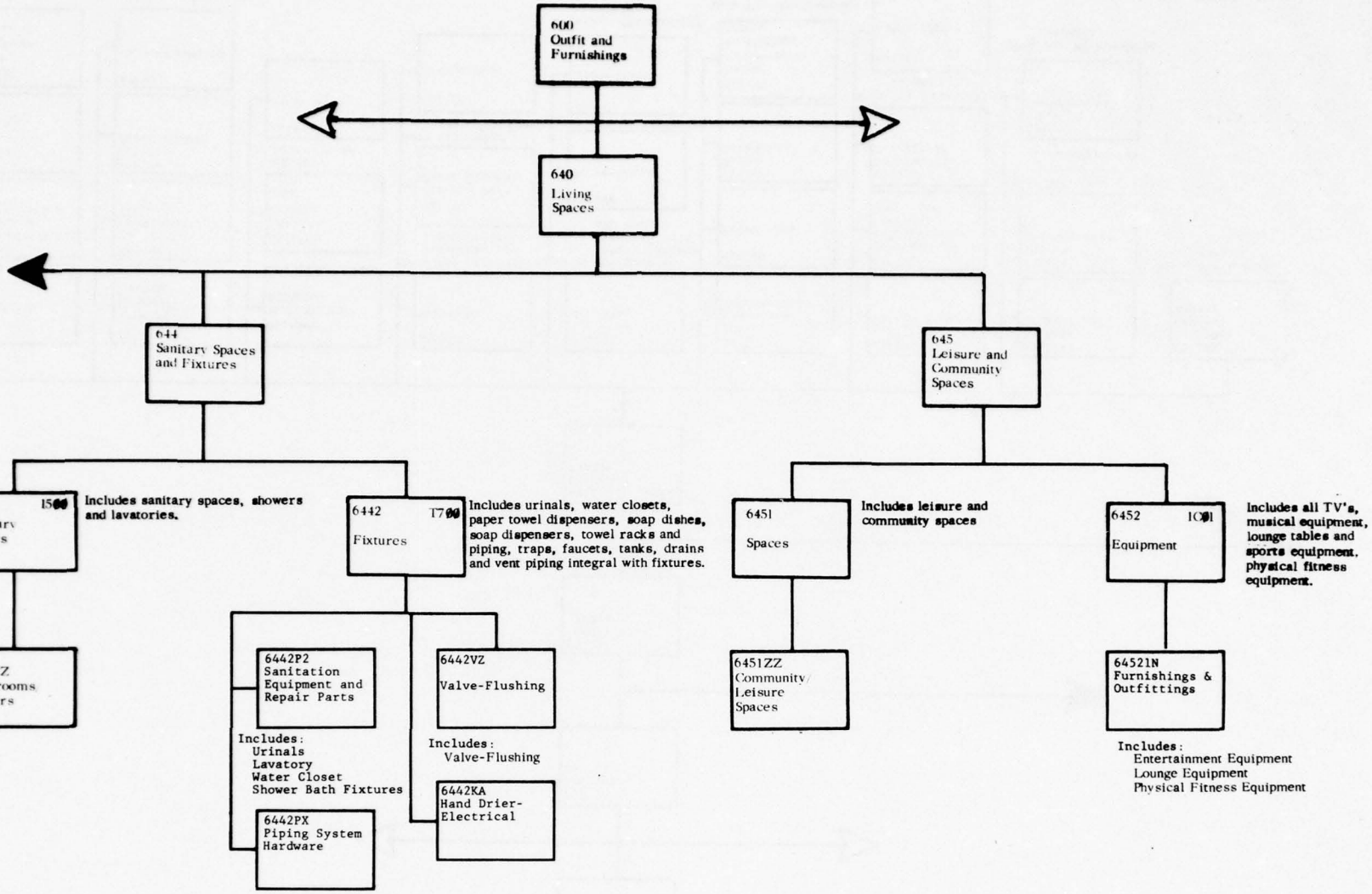


Includes bracket fans, bookcases, cabinets, shelves, linens, linen lockers, tableware, clocks, mess tables, mess gear, etc.

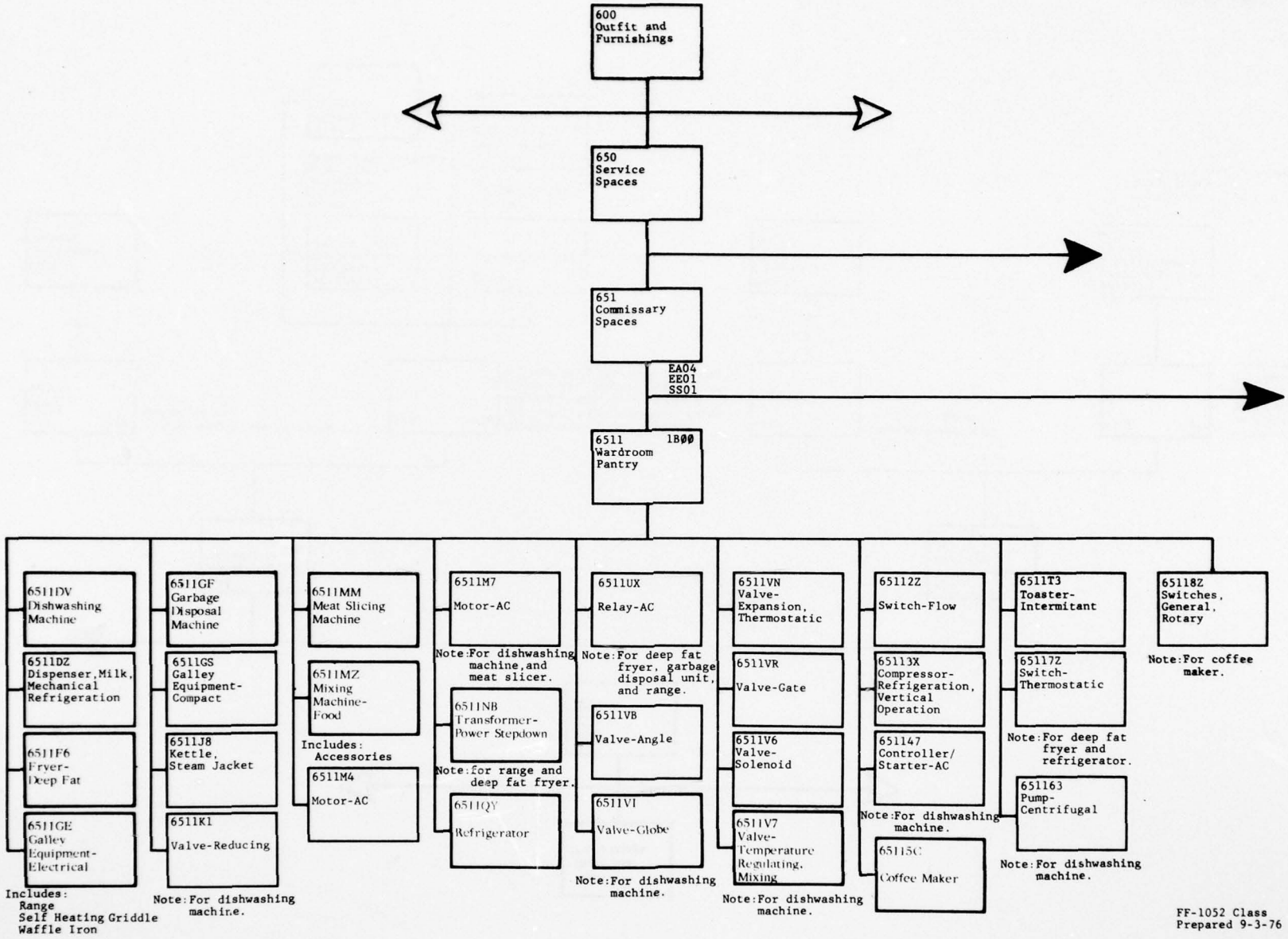
Does not include:
- Installed Lighting Fixtures (330)
- Plumbing fixtures (644)
- Cleaning Gear Lockers (671)
- Commissary Spaces (651)
- Leisure an Community Spaces (645)

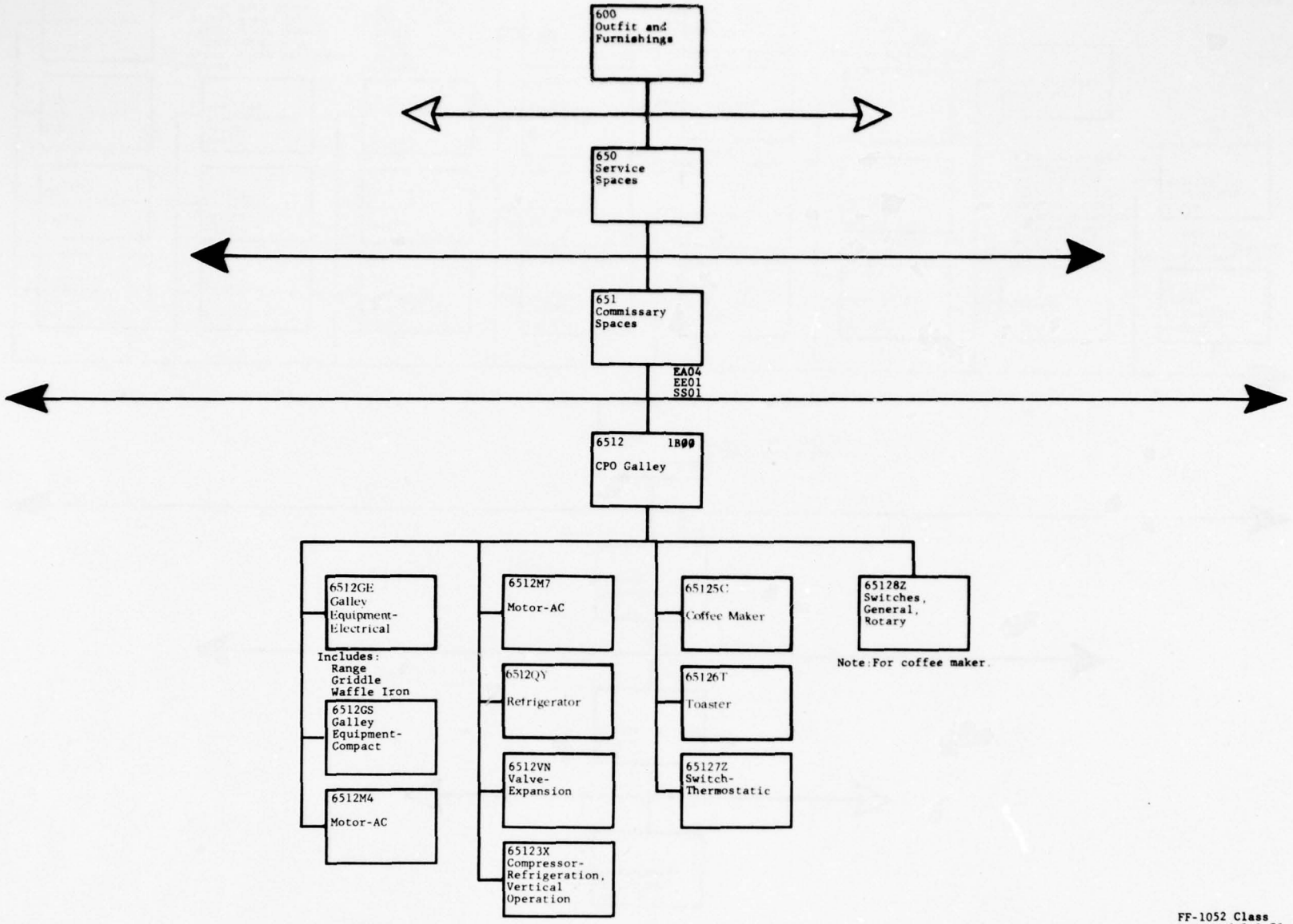
Includes berth lights, bracket fans, bunks, shelves, mirrors, etc.

Does not includes:
- Installed Lighting Fixtures (330)
- Plumbing Fixtures (644)
- Cleaning Gear Lockers (671)
- Leisure and Community Spaces (645)

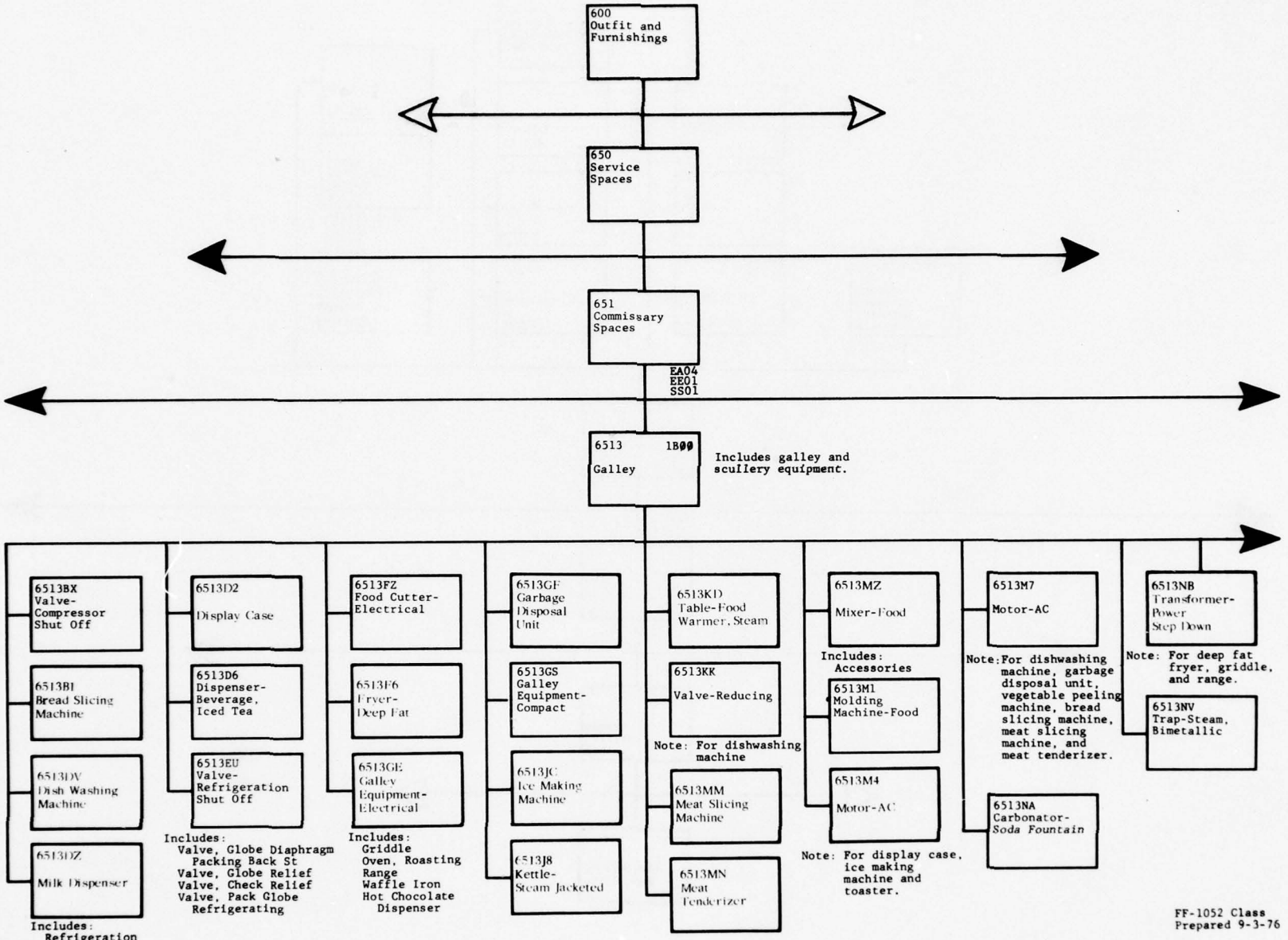


FF-1052 Class
Prepared 9-3-76

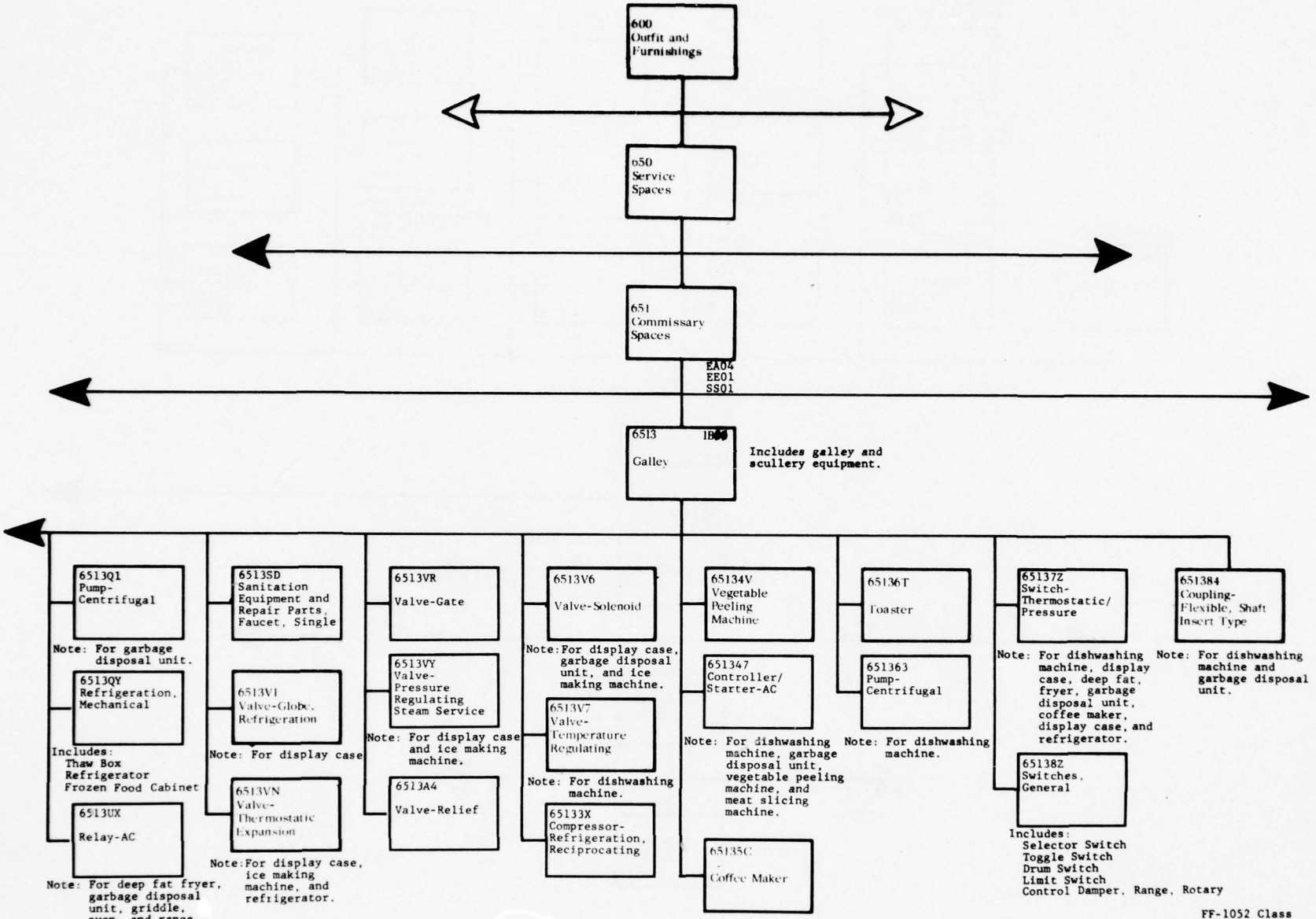

600
Outfit and Furnishings
650
Service Spaces
651
Commissary Spaces
EA04
EE01
SS01
6511 1BØØ
Wardroom Pantry
6511DV
Dishwashing Machine
6511DZ
Dispenser, Milk, Mechanical Refrigeration
6511F6
Fryer-Deep Fat
6511GE
Galley Equipment-Electrical
Includes:
Range
Self Heating Griddle
Waffle Iron
6511GF
Garbage Disposal Machine
6511GS
Galley Equipment-Compact
6511J8
Kettle, Steam Jacket
6511K1
Valve-Reducing
Note: For dishwashing machine.
6511MM
Meat Slicing Machine
6511MZ
Mixing Machine-Food
Includes:
Accessories
6511M4
Motor-AC
6511M7
Motor-AC
Note: For dishwashing machine, and meat slicer.
6511NB
Transformer-Power Stepdown
Note: for range and deep fat fryer.
6511QY
Refrigerator
6511UX
Relay-AC
Note: For deep fat fryer, garbage disposal unit, and range.
6511VB
Valve-Angle
6511VI
Valve-Globe
Note: For dishwashing machine.
6511VN
Valve-Expansion, Thermostatic
6511VR
Valve-Gate
6511V6
Valve-Solenoid
6511V7
Valve-Temperature Regulating, Mixing
Note: For dishwashing machine.
65112Z
Switch-Flow
65113X
Compressor-Refrigeration, Vertical Operation
651147
Controller/Starter-AC
Note: For dishwashing machine.
65115C
Coffee Maker
6511T3
Toaster-Intermitant
65117Z
Switch-Thermostatic
Note: For deep fat fryer and refrigerator.
651163
Pump-Centrifugal
Note: For dishwashing machine.
65118Z
Switches, General, Rotary
Note: For coffee maker.
FF-1052 Class
Prepared 9-3-76



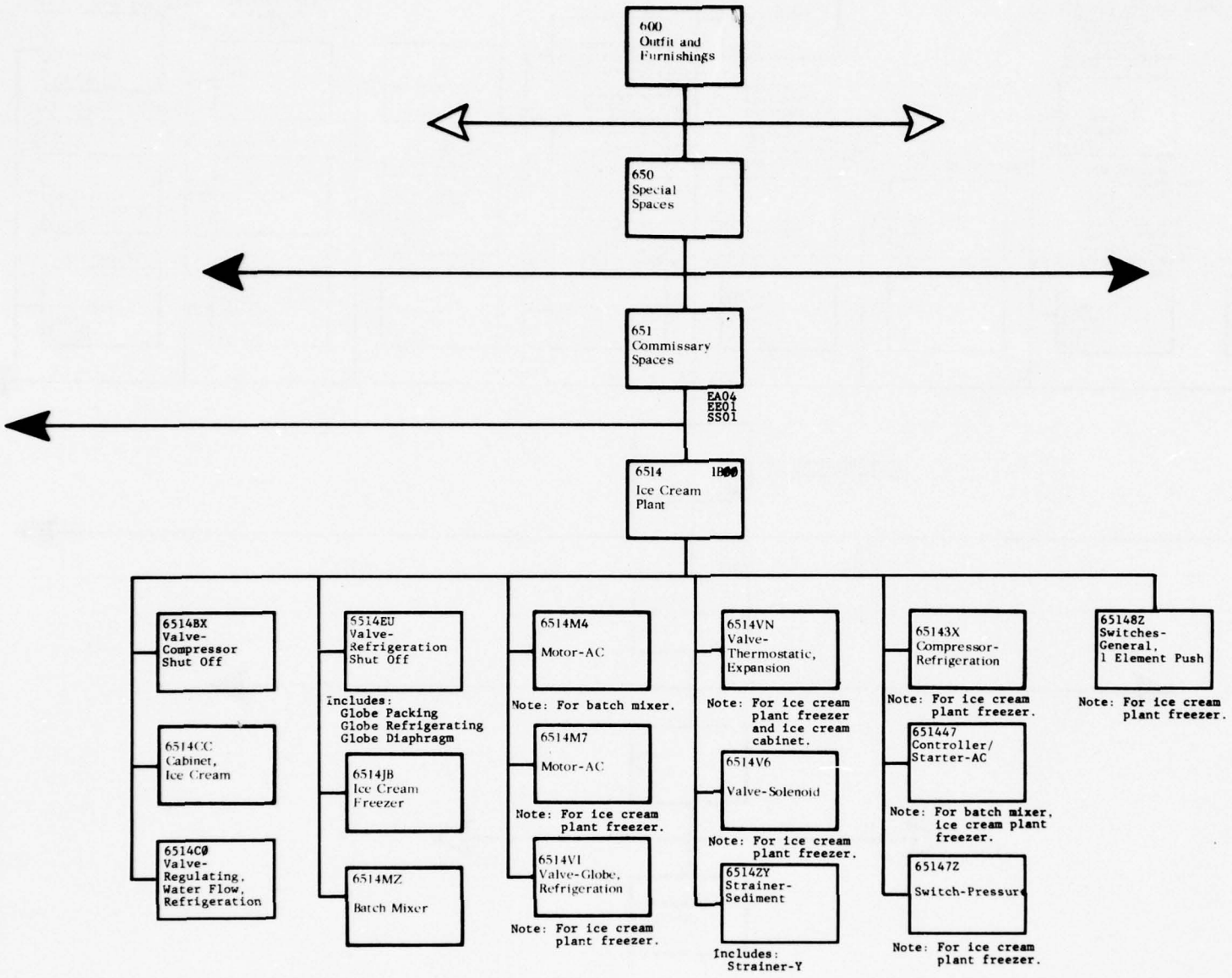
FF-1052 Class
Prepared 9-3-76



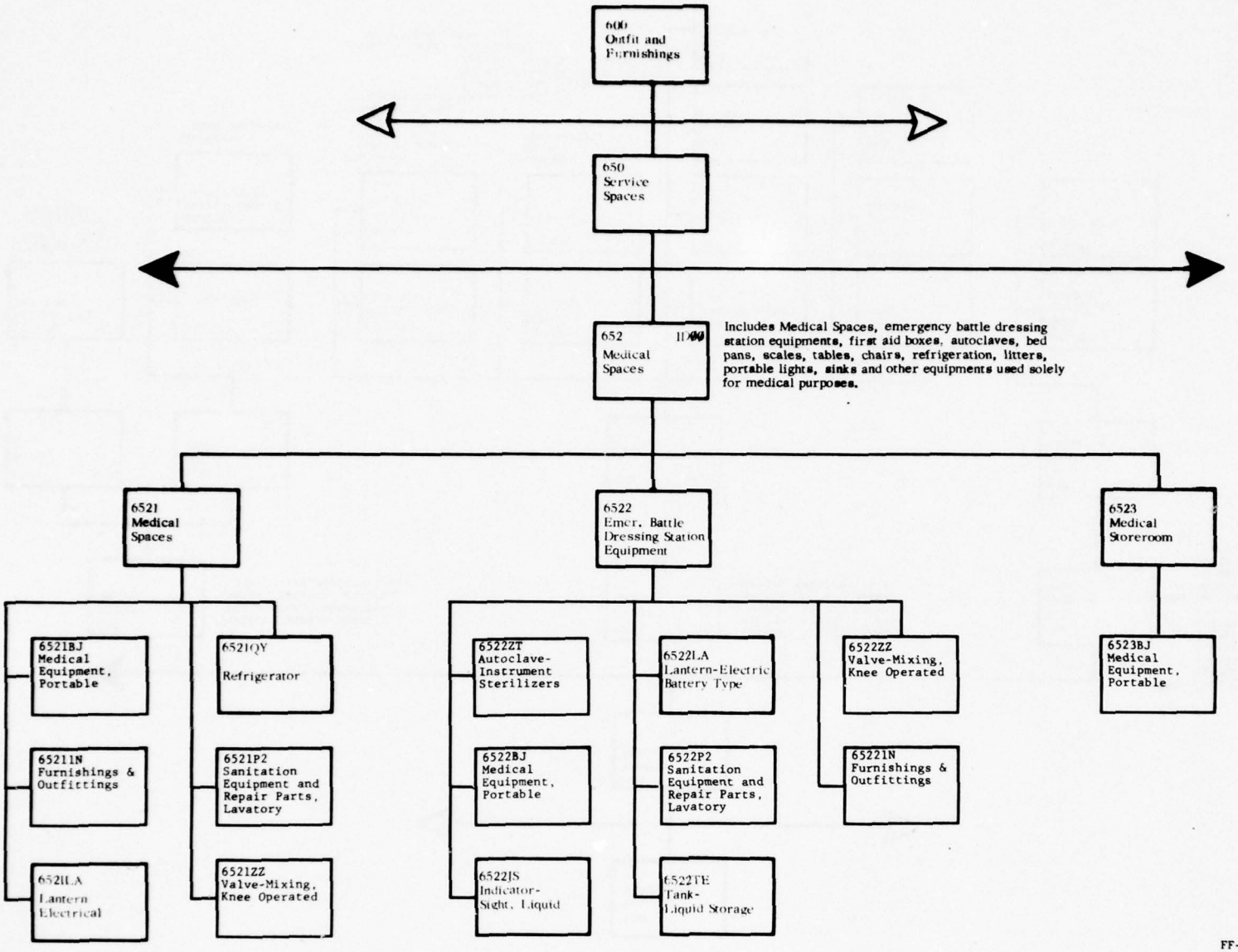
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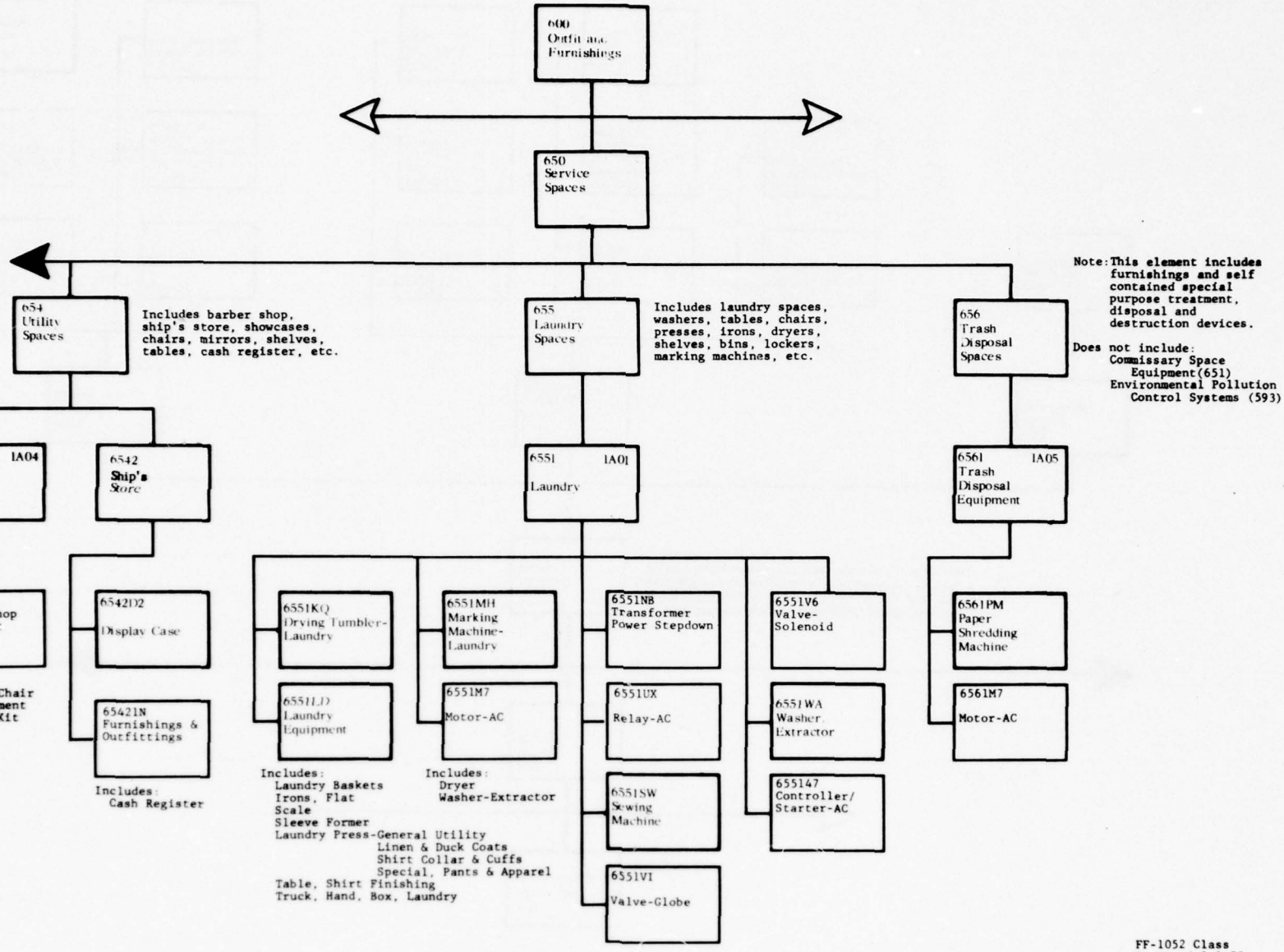
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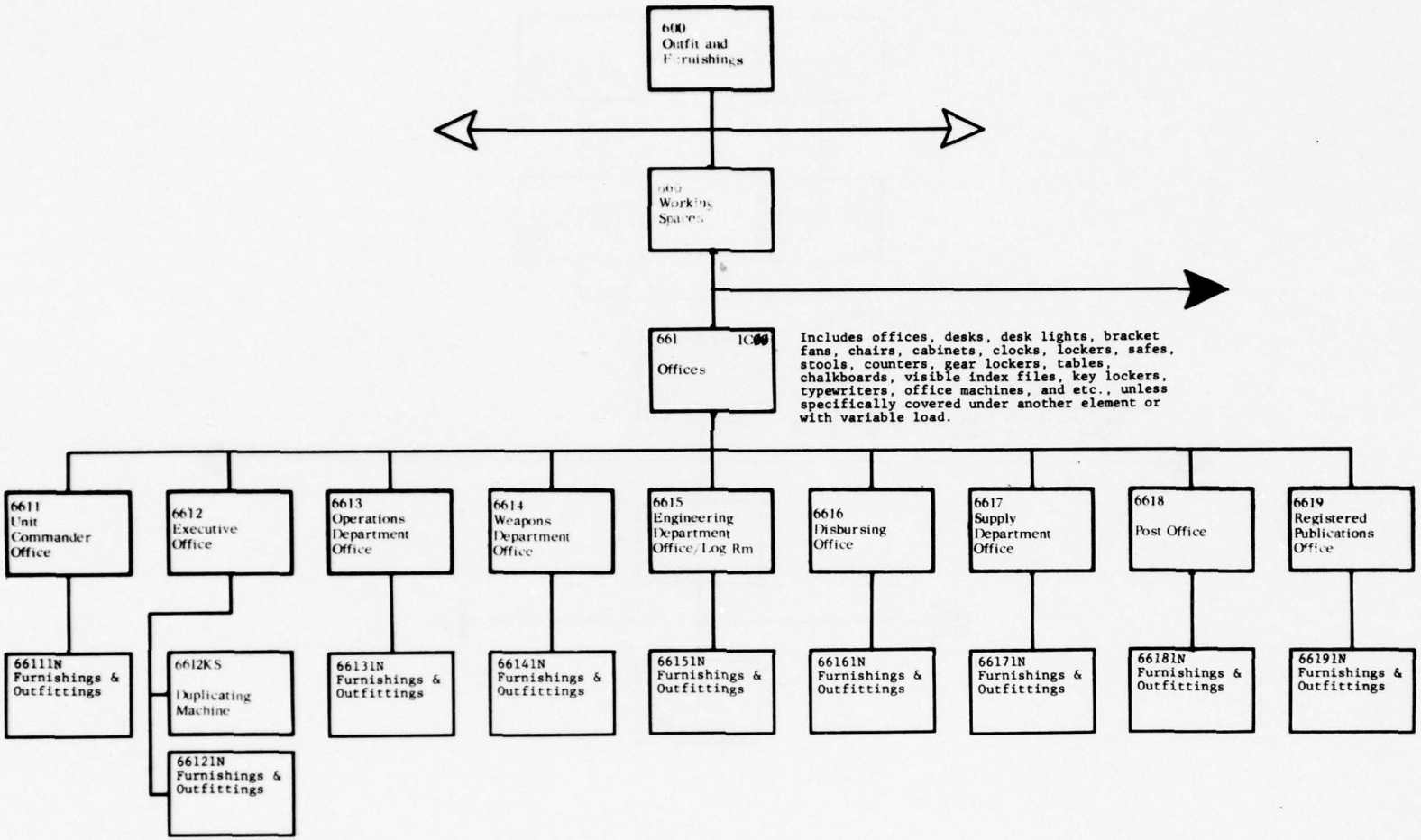
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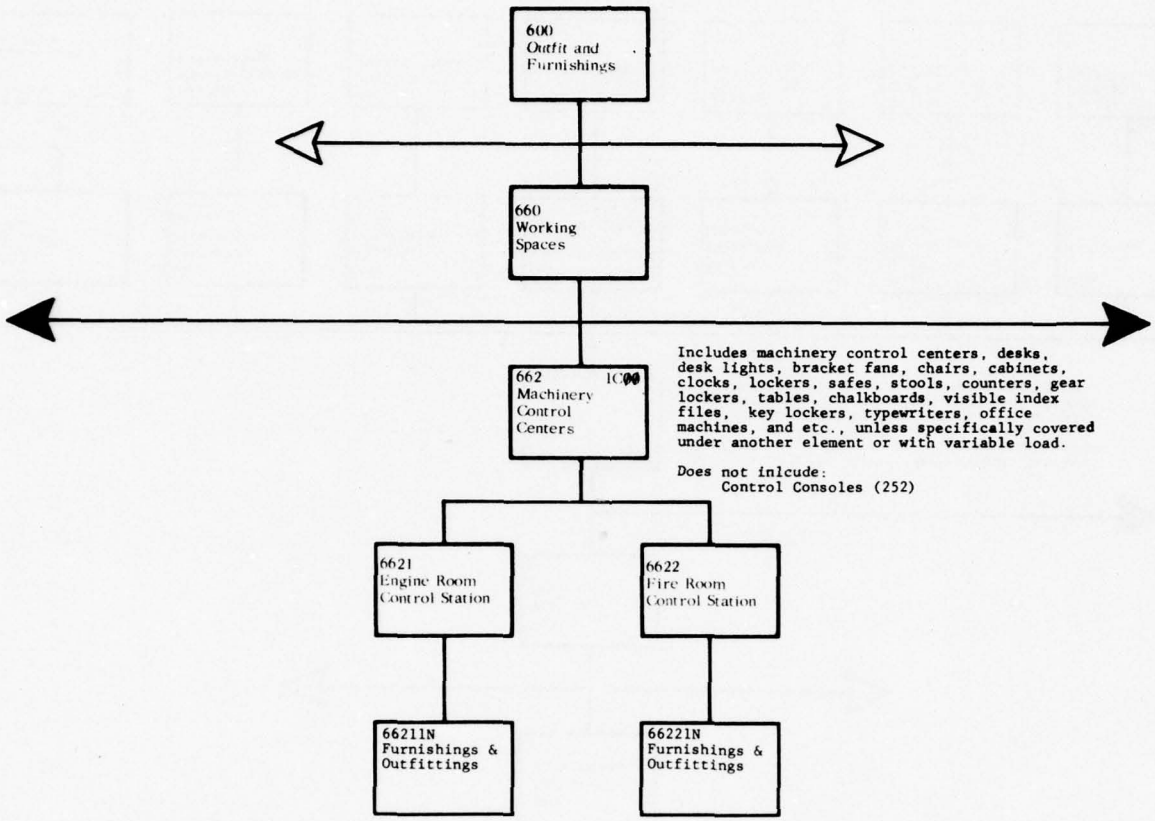


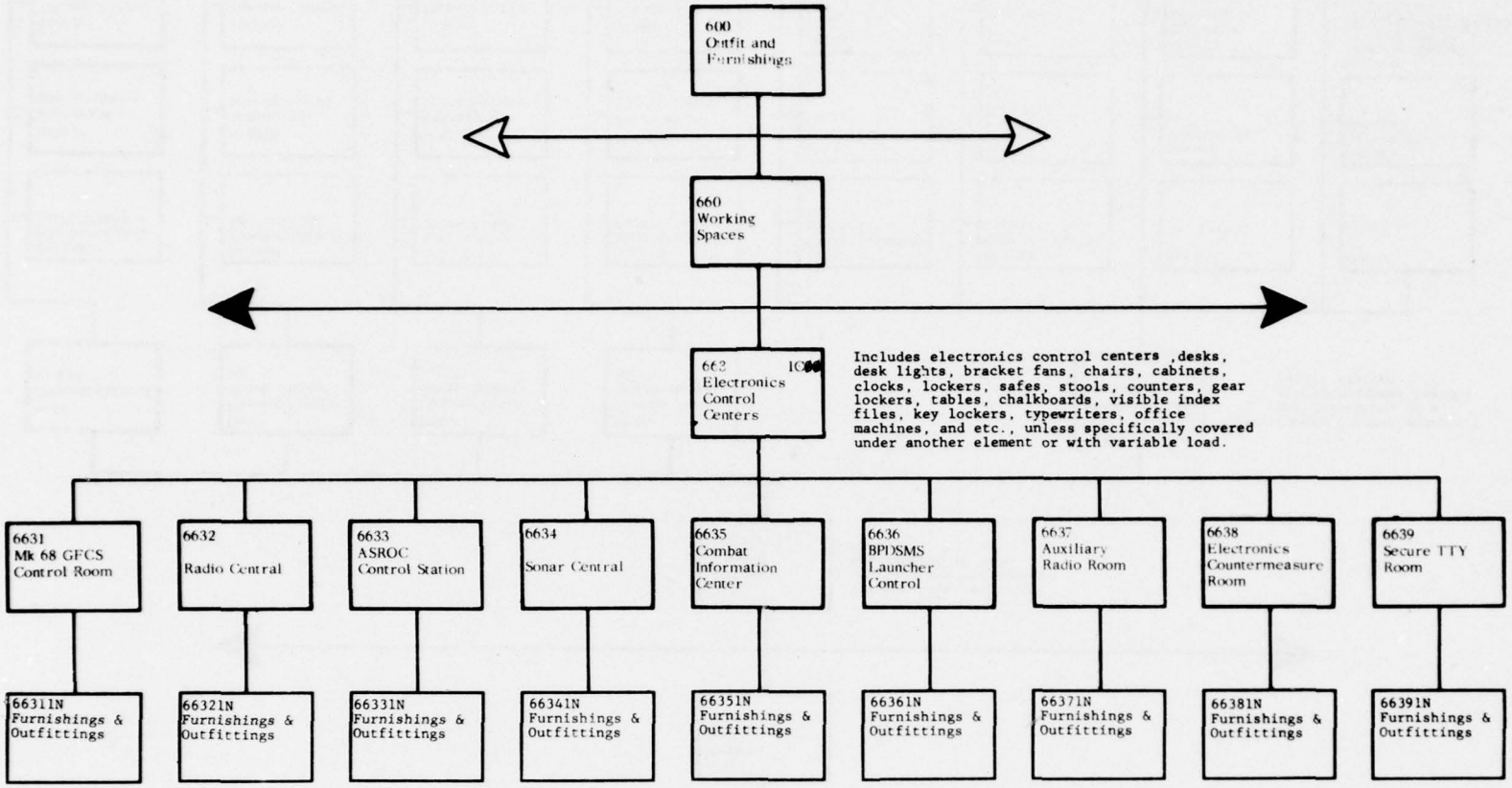
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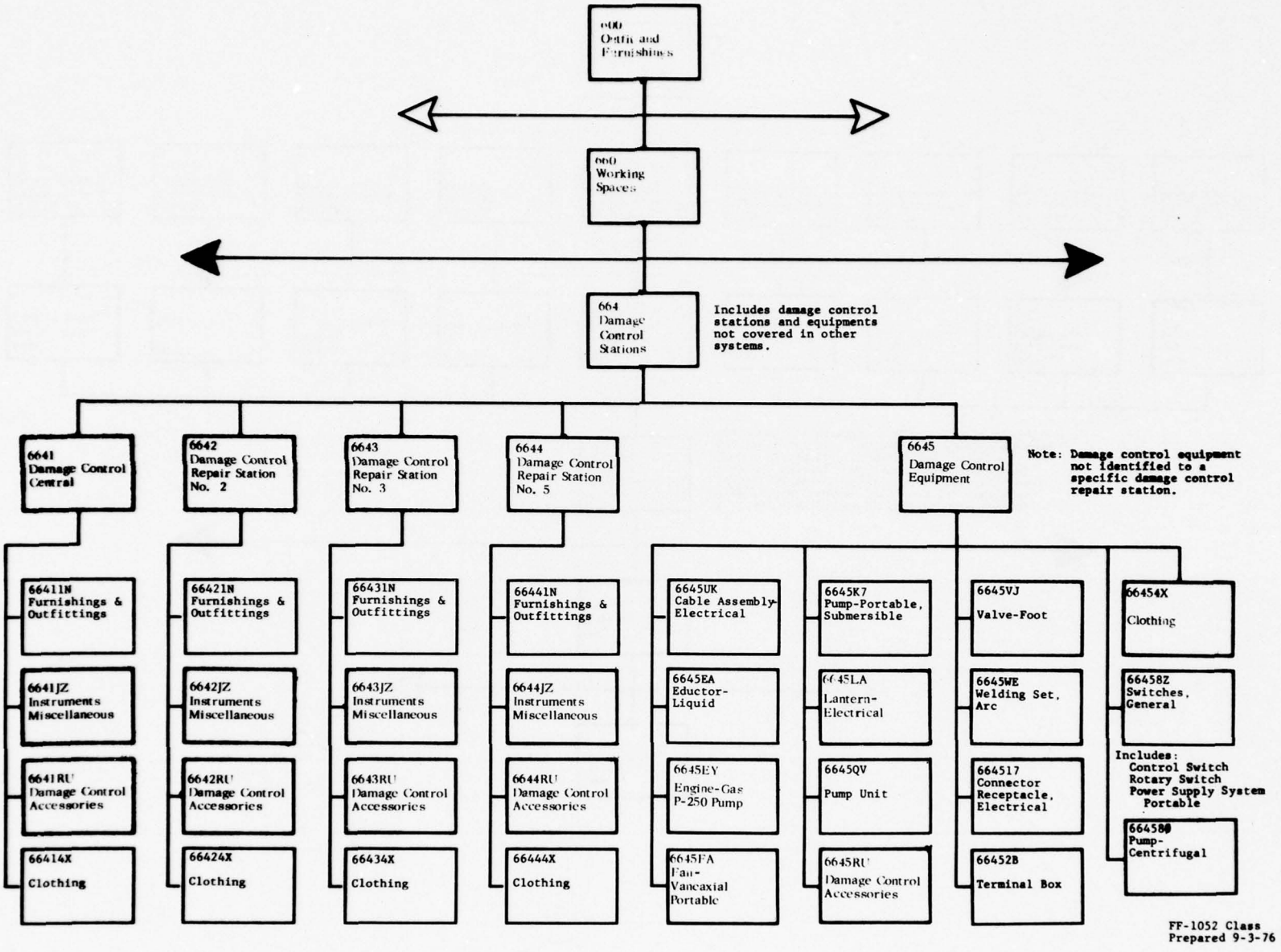


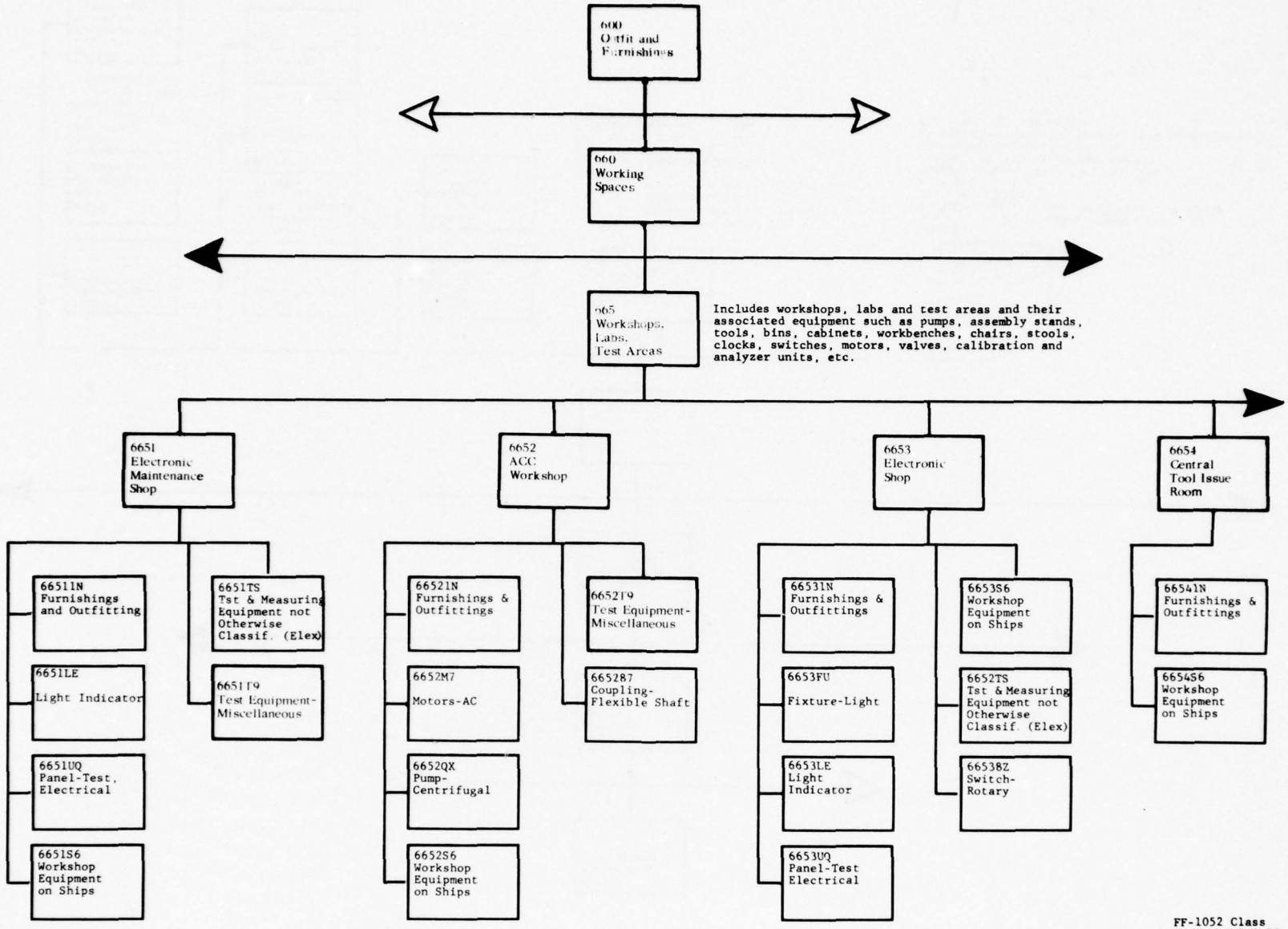
FF-1052 Class
Prepared 9-3-76


600
Outfit and
Furnishings
660
Working
Spaces
661
Offices
Includes offices, desks, desk lights, bracket fans, chairs, cabinets, clocks, lockers, safes, stools, counters, gear lockers, tables, chalkboards, visible index files, key lockers, typewriters, office machines, and etc., unless specifically covered under another element or with variable load.
6611
Unit
Commander
Office
6612
Executive
Office
6613
Operations
Department
Office
6614
Weapons
Department
Office
6615
Engineering
Department
Office/Log Rm
6616
Disbursing
Office
6617
Supply
Department
Office
6618
Post Office
6619
Registered
Publications
Office
66111N
Furnishings &
Outfittings
6612KS
Duplicating
Machine
66121N
Furnishings &
Outfittings
66131N
Furnishings &
Outfittings
66141N
Furnishings &
Outfittings
66151N
Furnishings &
Outfittings
66161N
Furnishings &
Outfittings
66171N
Furnishings &
Outfittings
66181N
Furnishings &
Outfittings
66191N
Furnishings &
Outfittings

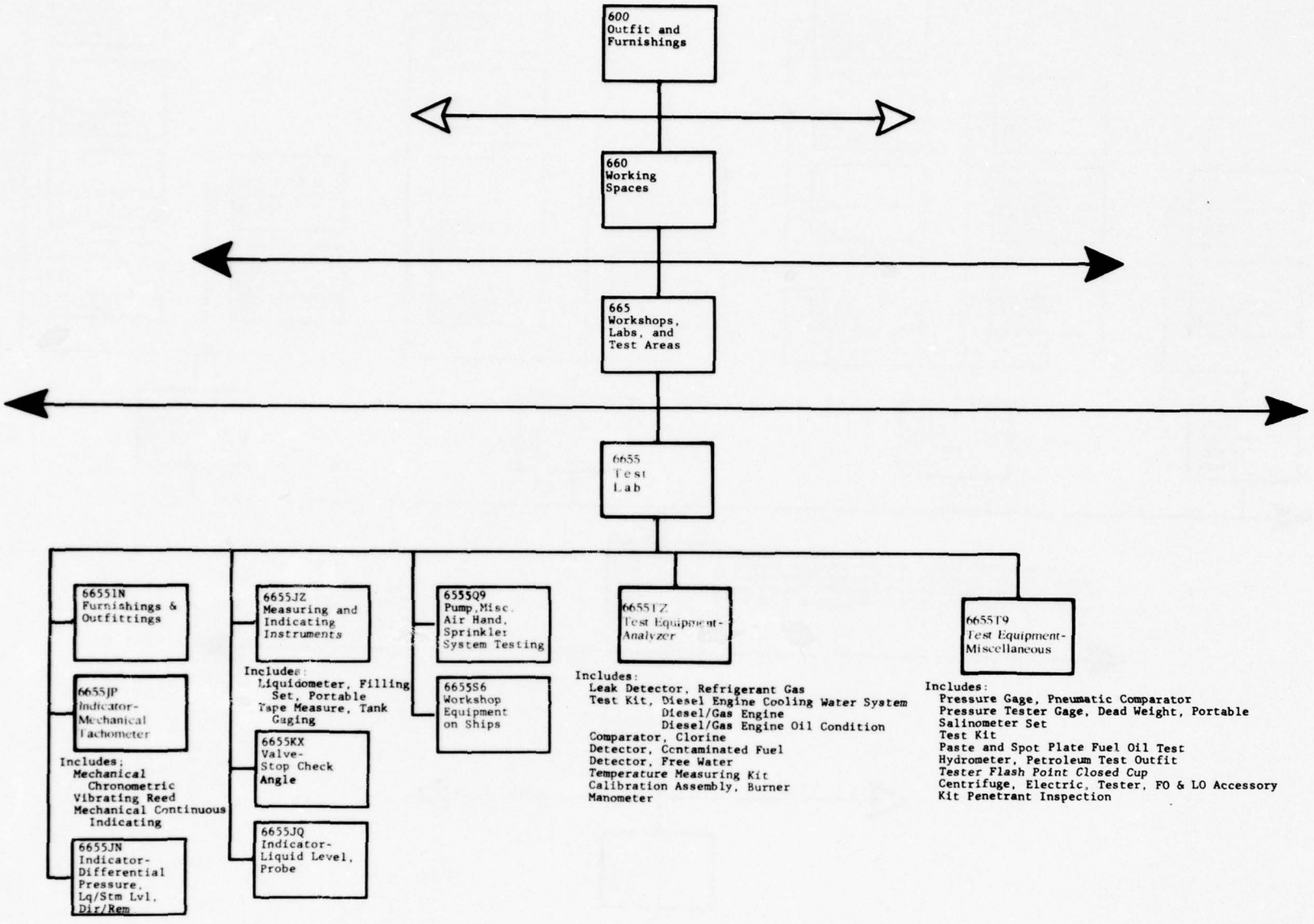

600
Outfit and
Furnishings
660
Working
Spaces
662
Machinery
Control
Centers
Includes machinery control centers, desks, desk lights, bracket fans, chairs, cabinets, clocks, lockers, safes, stools, counters, gear lockers, tables, chalkboards, visible index files, key lockers, typewriters, office machines, and etc., unless specifically covered under another element or with variable load.
Does not inlcude:
Control Consoles (252)
6621
Engine Room
Control Station
6622
Fire Room
Control Station
66211N
Furnishings &
Outfittings
66221N
Furnishings &
Outfittings


600
Outfit and Furnishings
660
Working Spaces
662
Electronics Control Centers
Includes electronics control centers ,desks, desk lights, bracket fans, chairs, cabinets, clocks, lockers, safes, stools, counters, gear lockers, tables, chalkboards, visible index files, key lockers, typewriters, office machines, and etc., unless specifically covered under another element or with variable load.
6631
Mk 68 GFCS Control Room
6632
Radio Central
6633
ASROC Control Station
6634
Sonar Central
6635
Combat Information Center
6636
BPDSMS Launcher Control
6637
Auxiliary Radio Room
6638
Electronics Countermeasure Room
6639
Secure TTY Room
66311N
Furnishings & Outfittings
66321N
Furnishings & Outfittings
66331N
Furnishings & Outfittings
66341N
Furnishings & Outfittings
66351N
Furnishings & Outfittings
66361N
Furnishings & Outfittings
66371N
Furnishings & Outfittings
66381N
Furnishings & Outfittings
66391N
Furnishings & Outfittings

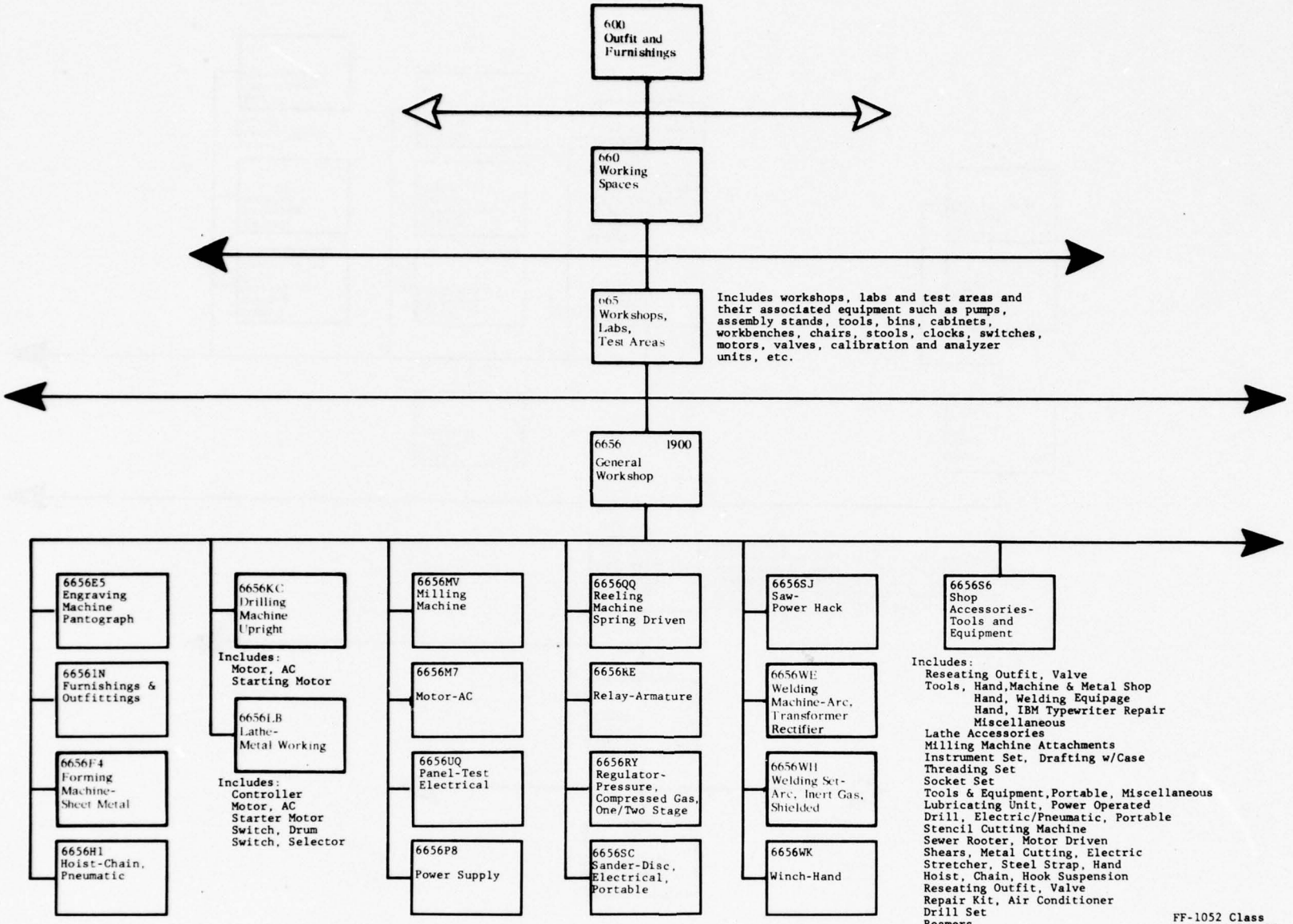

600
Outfit and Furnishings
660
Working Spaces
664
Damage Control Stations
Includes damage control stations and equipments not covered in other systems.
6641
Damage Control Central
6642
Damage Control Repair Station No. 2
6643
Damage Control Repair Station No. 3
6644
Damage Control Repair Station No. 5
6645
Damage Control Equipment
Note: Damage control equipment not identified to a specific damage control repair station.
66411N
Furnishings & Outfittings
6641JZ
Instruments Miscellaneous
6641RU
Damage Control Accessories
66414X
Clothing
66421N
Furnishings & Outfittings
6642JZ
Instruments Miscellaneous
6642RU
Damage Control Accessories
66424X
Clothing
66431N
Furnishings & Outfittings
6643JZ
Instruments Miscellaneous
6643RU
Damage Control Accessories
66434X
Clothing
66441N
Furnishings & Outfittings
6644JZ
Instruments Miscellaneous
6644RU
Damage Control Accessories
66444X
Clothing
6645UK
Cable Assembly-Electrical
6645EA
Eductor-Liquid
6645EY
Engine-Gas P-250 Pump
6645FA
Fan-Vancaxial Portable
6645K7
Pump-Portable, Submersible
6645LA
Lantern-Electrical
6645QV
Pump Unit
6645RU
Damage Control Accessories
6645VJ
Valve-Foot
6645WE
Welding Set, Arc
664517
Connector Receptacle, Electrical
66452B
Terminal Box
66454X
Clothing
66458Z
Switches, General
Includes:
Control Switch
Rotary Switch
Power Supply System Portable
66458@
Pump-Centrifugal
FF-1052 Class
Prepared 9-3-76

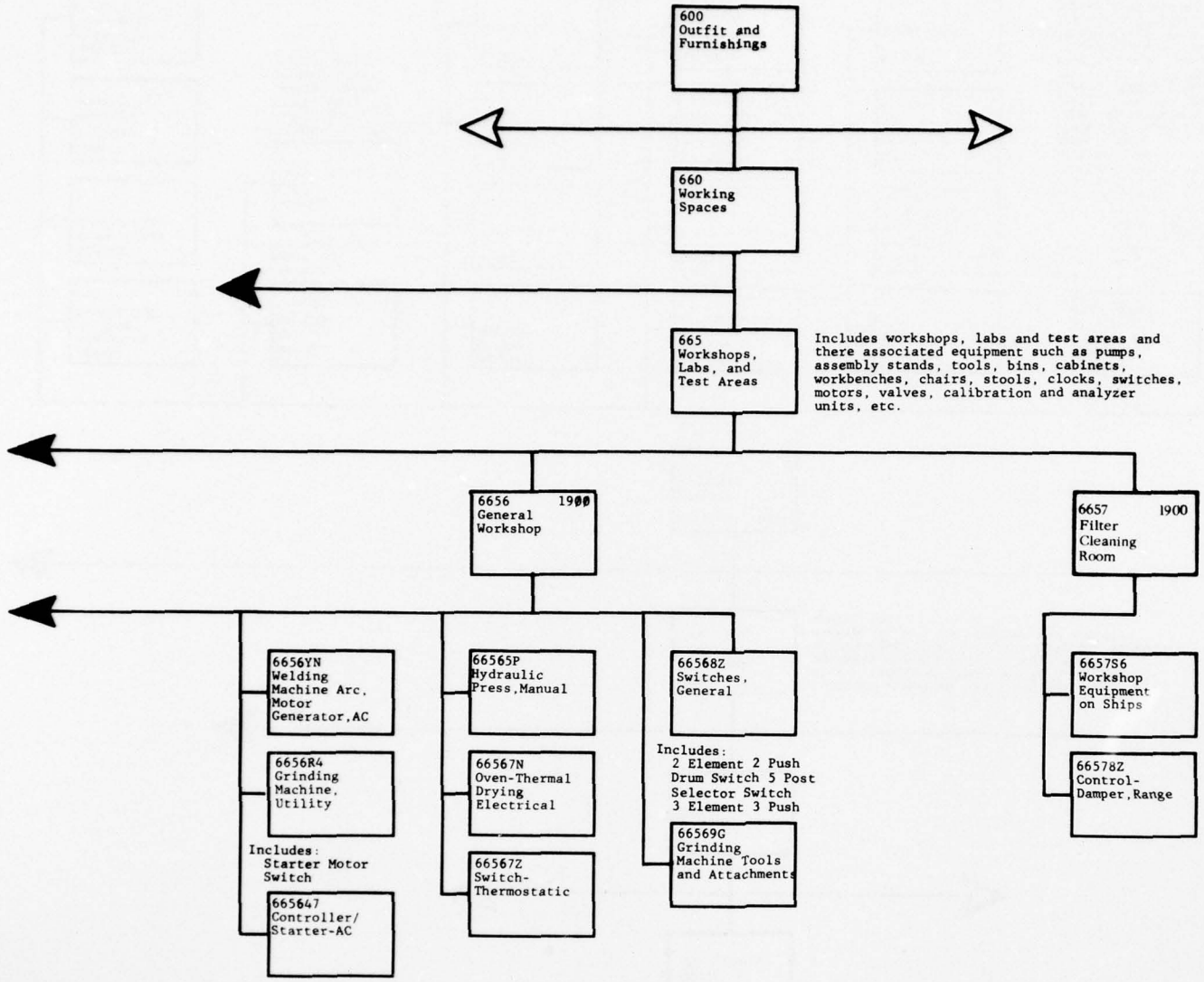


FF-1052 Class
Prepared 9-3-76

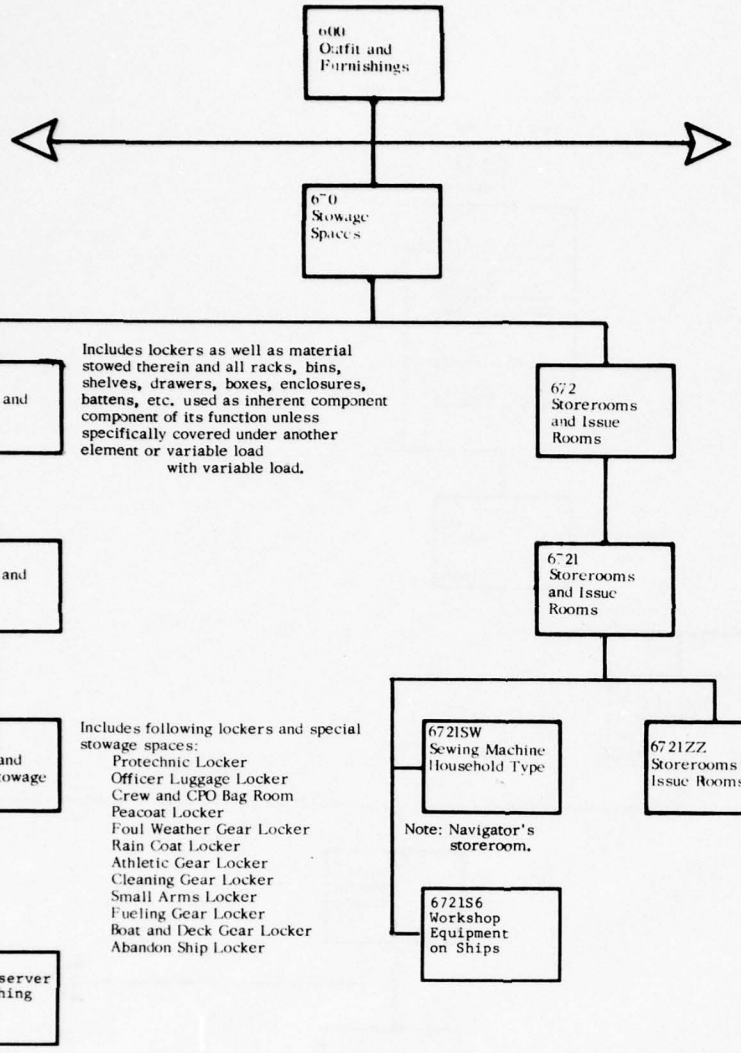


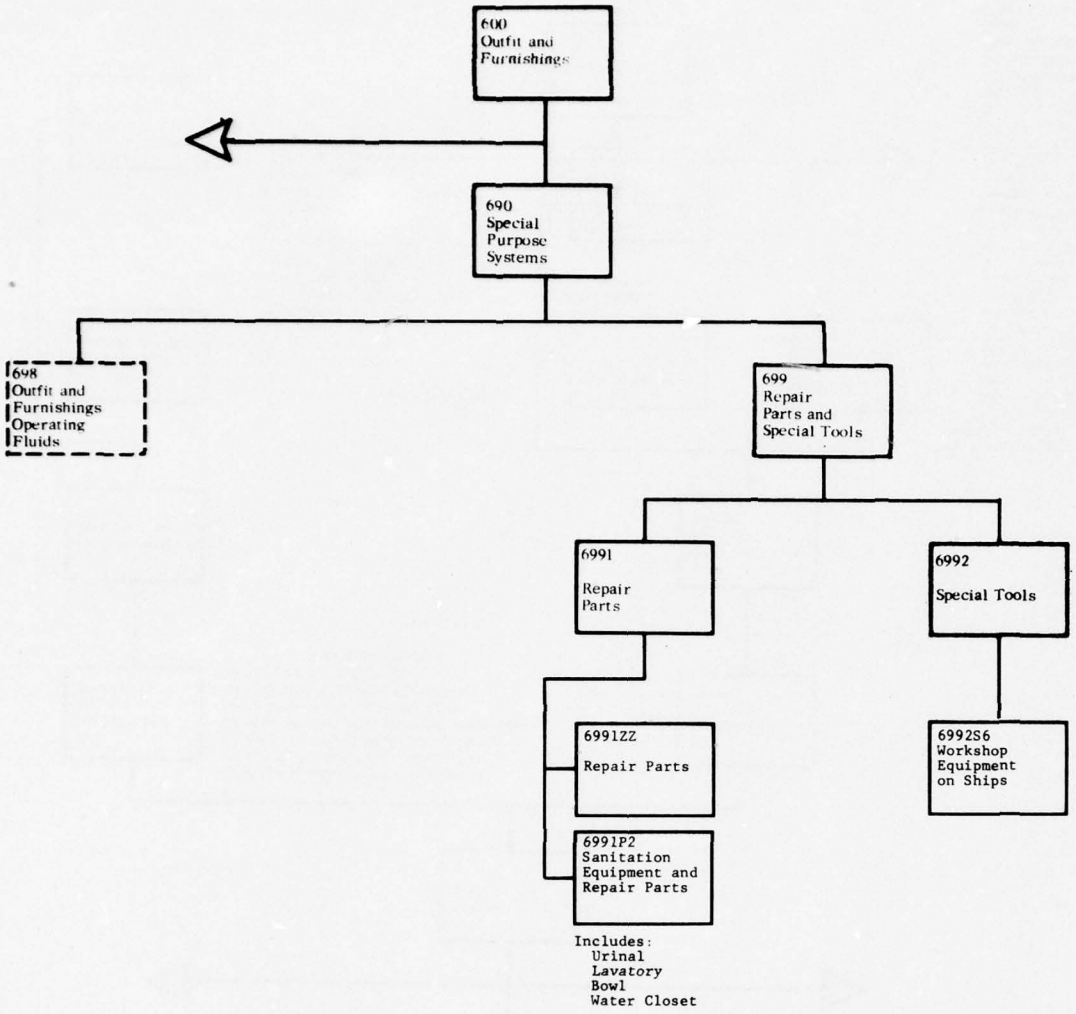
FF-1052 Class
Prepared 9-3-76


600
Outfit and Furnishings
660
Working Spaces
665
Workshops, Labs, Test Areas
Includes workshops, labs and test areas and their associated equipment such as pumps, assembly stands, tools, bins, cabinets, workbenches, chairs, stools, clocks, switches, motors, valves, calibration and analyzer units, etc.
6656 1900
General Workshop
6656E5
Engraving Machine Pantograph
66561N
Furnishings & Outfittings
6656F4
Forming Machine-Sheet Metal
6656H1
Hoist-Chain, Pneumatic
6656KC
Drilling Machine Upright
Includes:
Motor, AC
Starting Motor
6656LB
Lathe-Metal Working
Includes:
Controller
Motor, AC
Starter Motor
Switch, Drum
Switch, Selector
6656MV
Milling Machine
6656M7
Motor-AC
6656UQ
Panel-Test Electrical
6656P8
Power Supply
6656QQ
Reeling Machine Spring Driven
6656KE
Relay-Armature
6656RY
Regulator-Pressure, Compressed Gas, One/Two Stage
6656SC
Sander-Disc, Electrical, Portable
6656SJ
Saw-Power Hack
6656WE
Welding Machine-Arc, Transformer Rectifier
6656WH
Welding Set-Arc, Inert Gas, Shielded
6656WK
Winch-Hand
6656S6
Shop Accessories-Tools and Equipment
Includes:
Reseating Outfit, Valve
Tools, Hand,Machine & Metal Shop
Hand, Welding Equipage
Hand, IBM Typewriter Repair
Miscellaneous
Lathe Accessories
Milling Machine Attachments
Instrument Set, Drafting w/Case
Threading Set
Socket Set
Tools & Equipment,Portable, Miscellaneous
Lubricating Unit, Power Operated
Drill, Electric/Pneumatic, Portable
Stencil Cutting Machine
Sewer Rooter, Motor Driven
Shears, Metal Cutting, Electric
Stretcher, Steel Strap, Hand
Hoist, Chain, Hook Suspension
Reseating Outfit, Valve
Repair Kit, Air Conditioner
Drill Set
Reamers
Puller Set
Brazing and Soldering Set
FF-1052 Class
Prepared 9-3-76

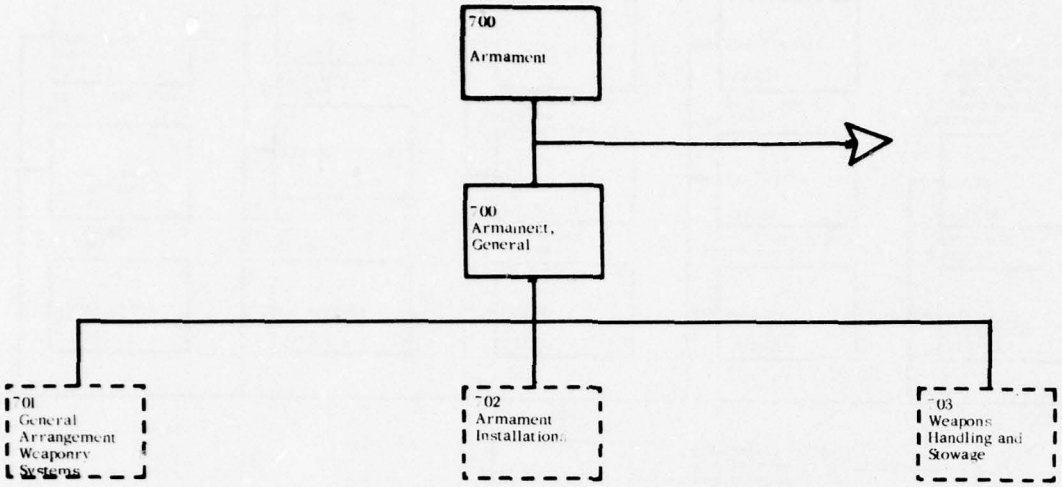


FF-1052 Class
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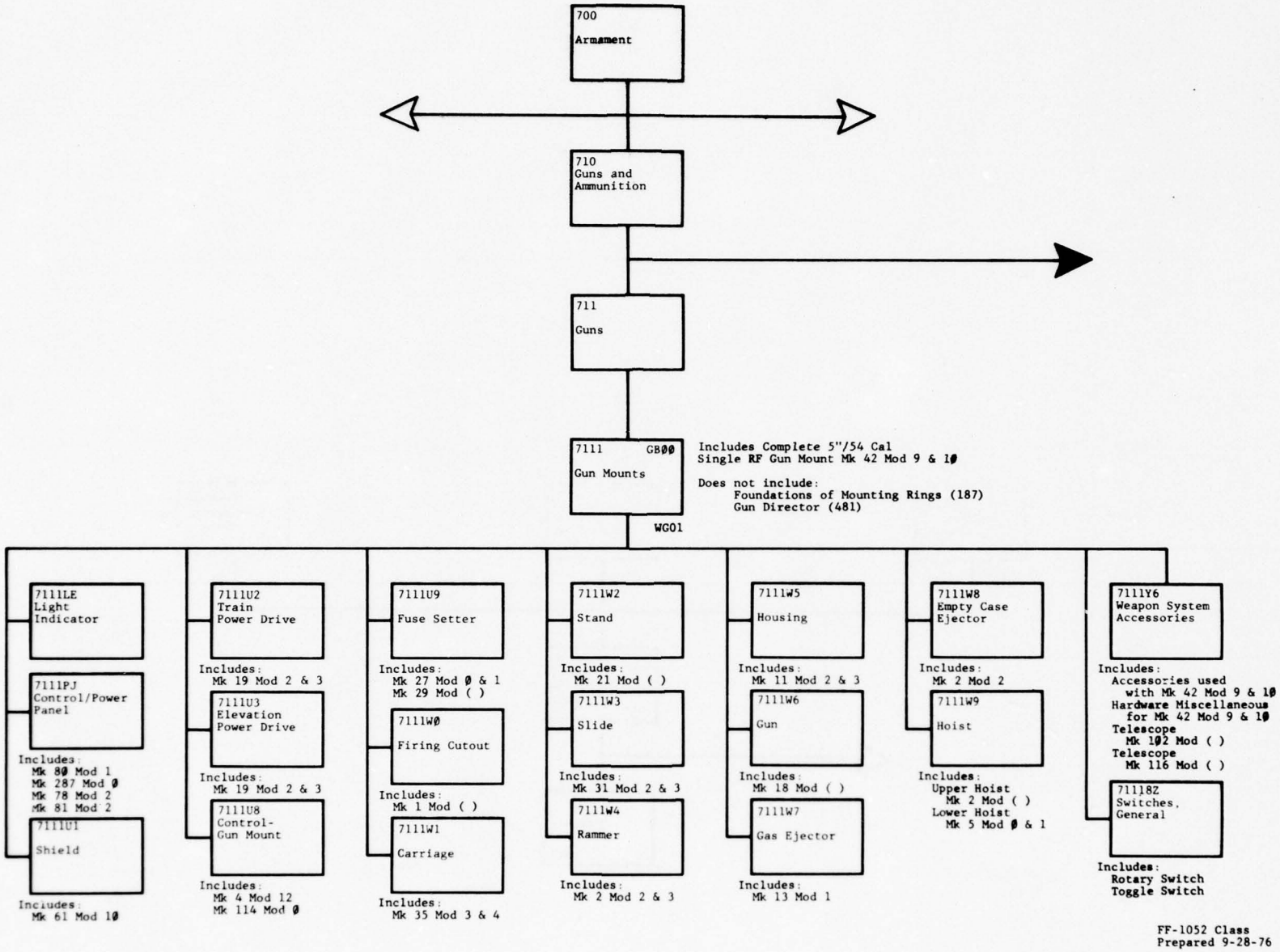

600
Outfit and Furnishings
670
Stowage Spaces
671
Lockers and Special Stowage
Includes lockers as well as material stowed therein and all racks, bins, shelves, drawers, boxes, enclosures, battens, etc. used as inherent component component of its function unless specifically covered under another element or variable load
with variable load.
672
Storerooms and Issue Rooms
6711
Lockers and Special Stowage
6721
Storerooms and Issue Rooms
6711ZZ
Lockers and Special Stowage
Includes following lockers and special stowage spaces:
Protechnic Locker
Officer Luggage Locker
Crew and CPO Bag Room
Peacoat Locker
Foul Weather Gear Locker
Rain Coat Locker
Athletic Gear Locker
Cleaning Gear Locker
Small Arms Locker
Fueling Gear Locker
Boat and Deck Gear Locker
Abandon Ship Locker
67114X
Life Preserver and Clothing Outfit
6721SW
Sewing Machine Household Type
Note: Navigator's storeroom.
6721S6
Workshop Equipment on Ships
6721ZZ
Storerooms and Issue Rooms
Includes the following storerooms and issue rooms:
Wardroom Storeroom
Motion Picture Storeroom
Dry Provisions Storeroom and Issue Room
Bulk Stores and Repair Parts Storeroom
Auxiliary Storeroom
Chemical Warfare Defense Equipment Storeroom
Landing Force Equipment Storeroom
Special Clothing Storeroom
Miscellaneous Storeroom
Bosn's Storeroom
Executive Officer Storeroom
Unit Commander Storeroom
Captains Storeroom
Electronic Storeroom
ASROC Component Storeroom
Bosn's and Diving Gear Storeroom
CPO Storeroom
Flammable Gas Cylinder Storeroom
Mooring and Towing Gear Storeroom
Navigators Storeroom
Signal Equipment Storeroom
MAA Storeroom
Paint Mixing and Issue Storeroom
Laundry Storeroom
Central Tool Room
Flammable Liquids Storeroom
Ship's Store Clothing and Small Stores Storeroom
FF-1052 Class
Prepared 9-3-76

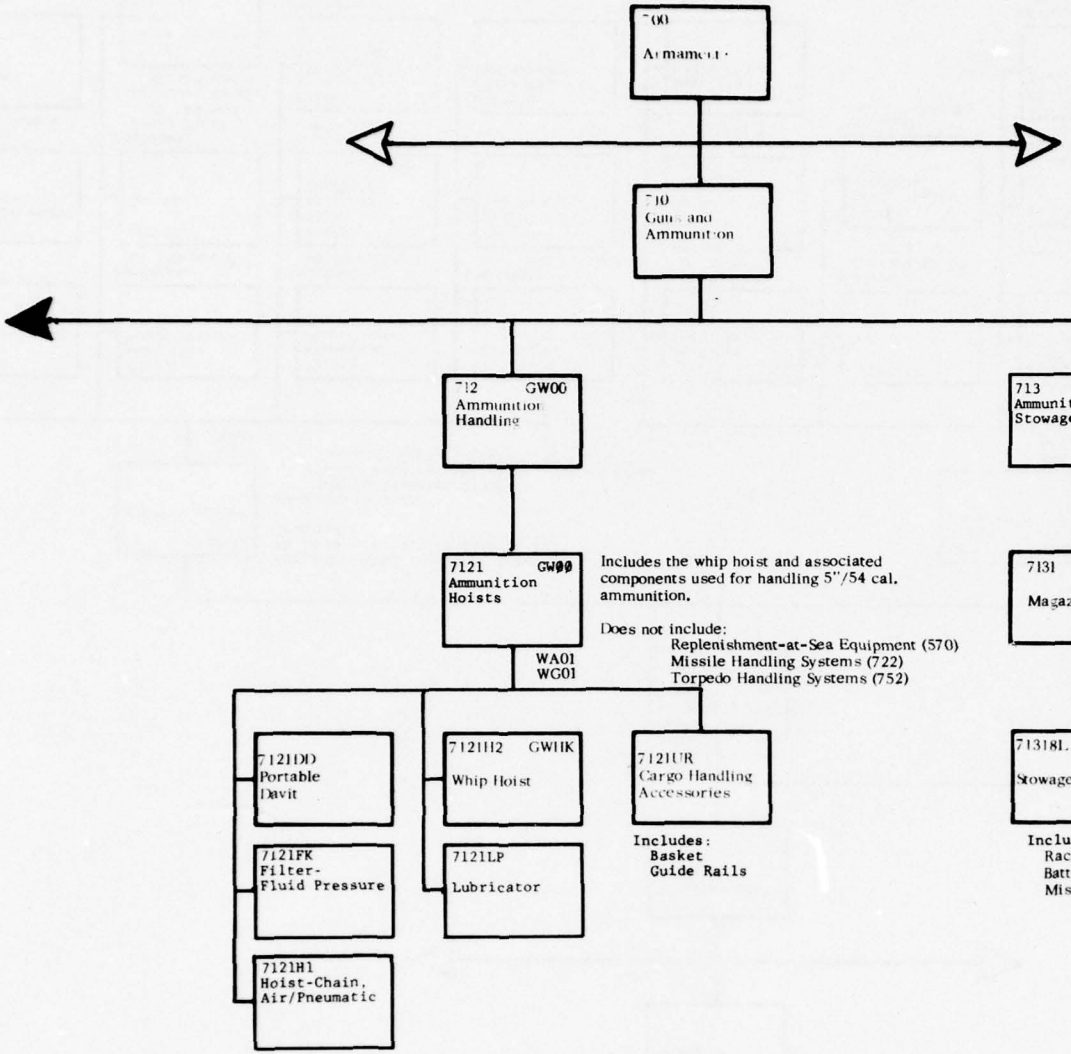


FF-1052 Class
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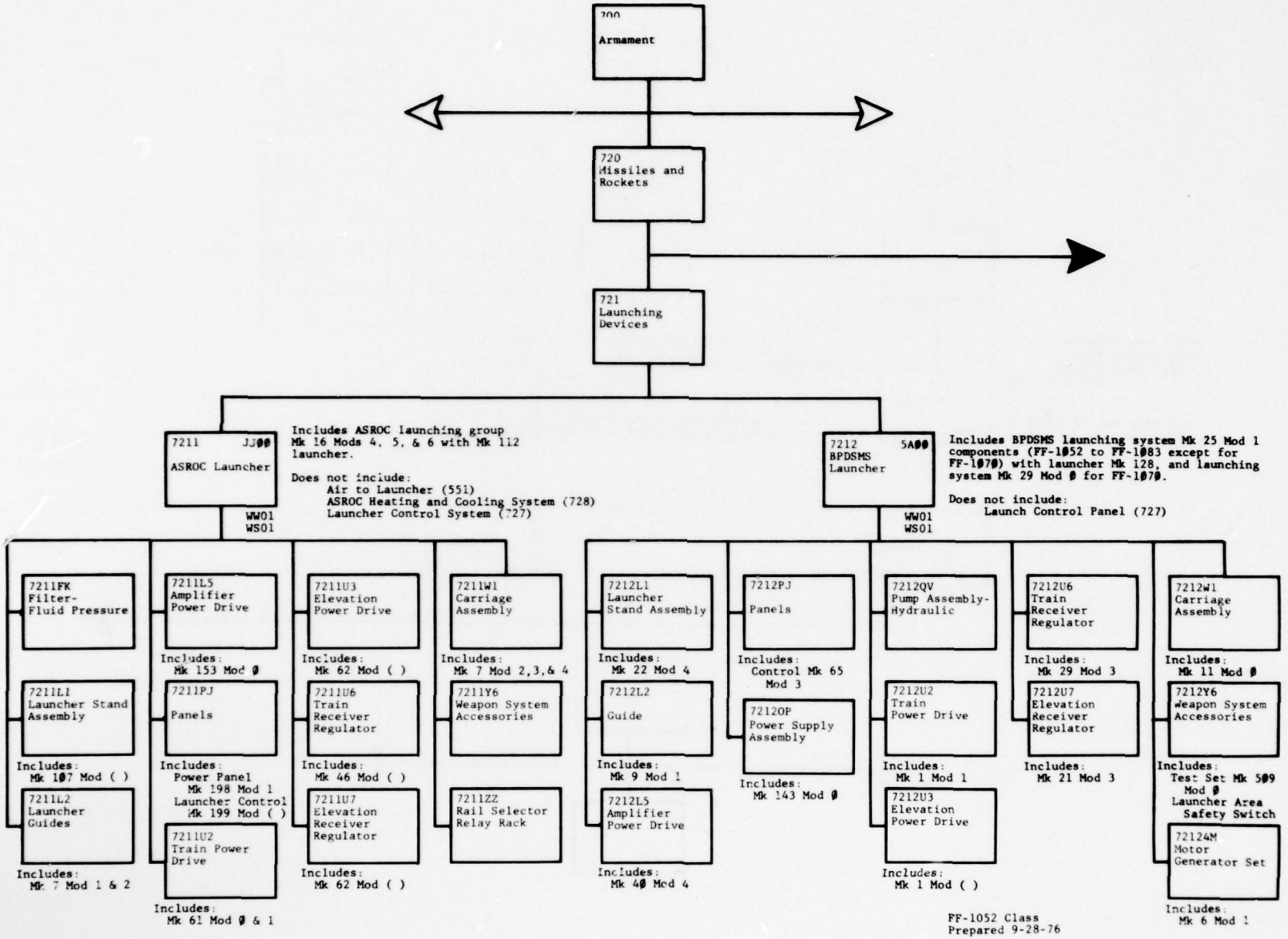


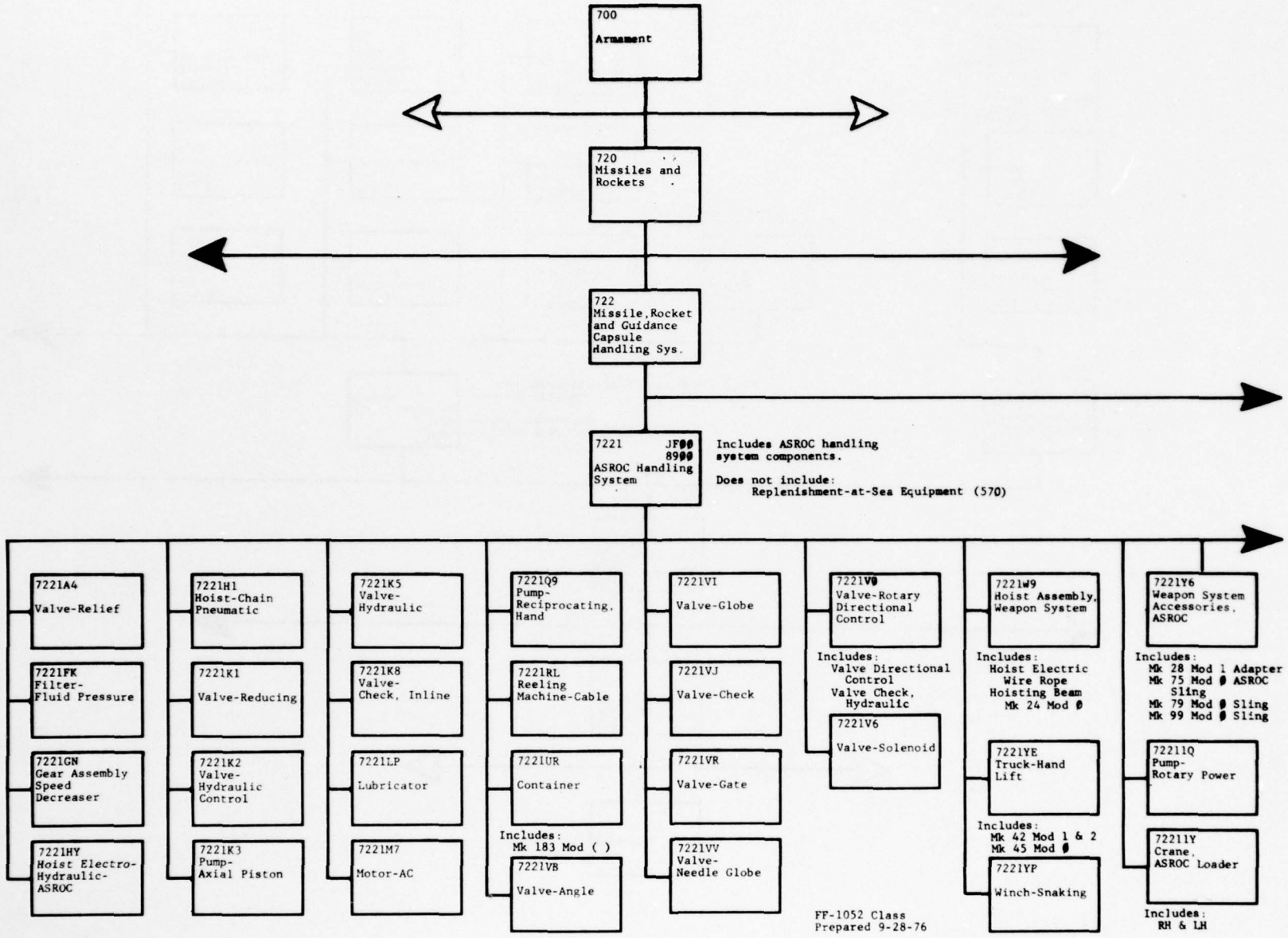
FF-1052 Class
Prepared 9-3-76

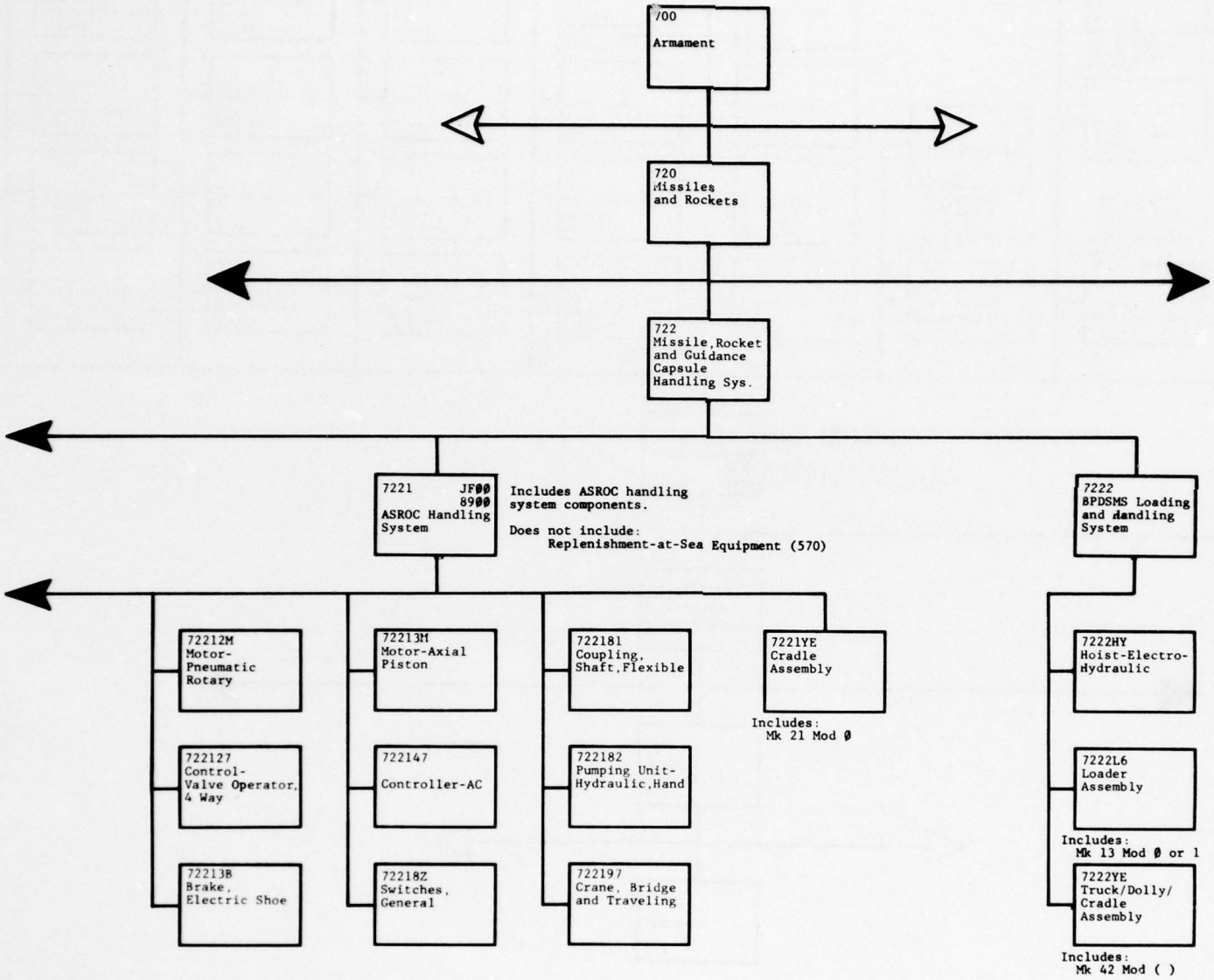

700
Armament
710
Guns and
Ammunition
711
Guns
7111 GB00
Gun Mounts
WG01
Includes Complete 5"/54 Cal
Single RF Gun Mount Mk 42 Mod 9 & 10
Does not include:
Foundations of Mounting Rings (187)
Gun Director (481)
7111LE
Light
Indicator
7111PJ
Control/Power
Panel
Includes:
Mk 80 Mod 1
Mk 287 Mod 0
Mk 78 Mod 2
Mk 81 Mod 2
7111U1
Shield
Includes:
Mk 61 Mod 10
7111U2
Train
Power Drive
Includes:
Mk 19 Mod 2 & 3
7111U3
Elevation
Power Drive
Includes:
Mk 19 Mod 2 & 3
7111U8
Control-
Gun Mount
Includes:
Mk 4 Mod 12
Mk 114 Mod 0
7111U9
Fuse Setter
Includes:
Mk 27 Mod 0 & 1
Mk 29 Mod ( )
7111W0
Firing Cutout
Includes:
Mk 1 Mod ( )
7111W1
Carriage
Includes:
Mk 35 Mod 3 & 4
7111W2
Stand
Includes:
Mk 21 Mod ( )
7111W3
Slide
Includes:
Mk 31 Mod 2 & 3
7111W4
Rammer
Includes:
Mk 2 Mod 2 & 3
7111W5
Housing
Includes:
Mk 11 Mod 2 & 3
7111W6
Gun
Includes:
Mk 18 Mod ( )
7111W7
Gas Ejector
Includes:
Mk 13 Mod 1
7111W8
Empty Case
Ejector
Includes:
Mk 2 Mod 2
7111W9
Hoist
Includes:
Upper Hoist
Mk 2 Mod ( )
Lower Hoist
Mk 5 Mod 0 & 1
7111Y6
Weapon System
Accessories
Includes:
Accessories used
with Mk 42 Mod 9 & 10
Hardware Miscellaneous
for Mk 42 Mod 9 & 10
Telescope
Mk 102 Mod ( )
Telescope
Mk 116 Mod ( )
7111Z
Switches,
General
Includes:
Rotary Switch
Toggle Switch
FF-1052 Class
Prepared 9-28-76



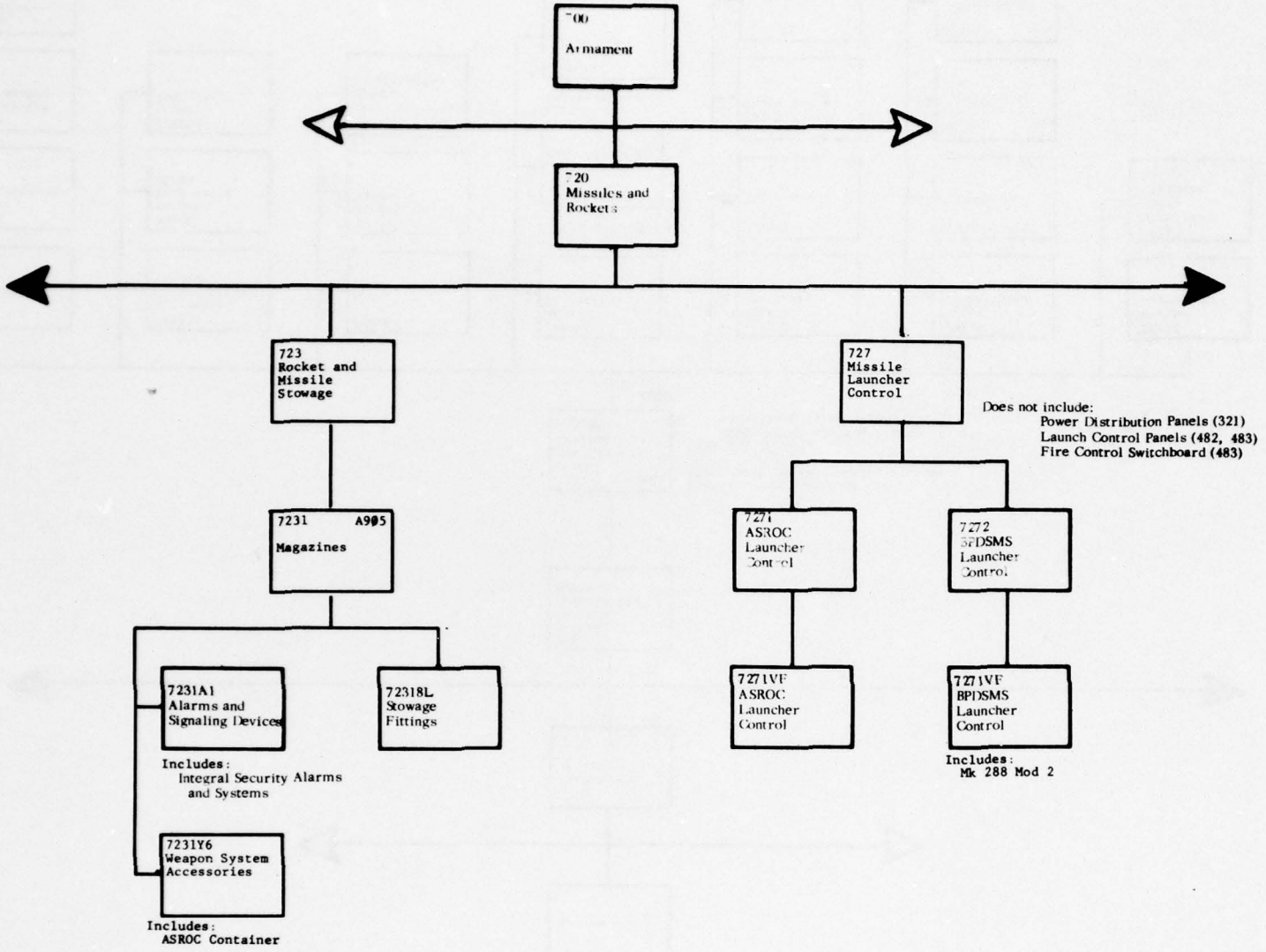
FF-1052 Class
Prepared 9-3-76


200
Armament
720
Missiles and Rockets
721
Launching Devices
7211 JJ00
ASROC Launcher
WW01
WS01
Includes ASROC launching group Mk 16 Mods 4, 5, & 6 with Mk 112 launcher.
Does not include:
Air to Launcher (551)
ASROC Heating and Cooling System (728)
Launcher Control System (727)
7212 5A00
BPDSMS Launcher
WW01
WS01
Includes BPDSMS launching system Mk 25 Mod 1 components (FF-1052 to FF-1083 except for FF-1070) with launcher Mk 128, and launching system Mk 29 Mod 0 for FF-1070.
Does not include:
Launch Control Panel (727)
7211FK Filter-Fluid Pressure
7211L1 Launcher Stand Assembly
Includes: Mk 107 Mod ( )
7211L2 Launcher Guides
Includes: Mk 7 Mod 1 & 2
7211L5 Amplifier Power Drive
Includes: Mk 153 Mod 0
7211PJ Panels
Includes: Power Panel Mk 198 Mod 1 Launcher Control Mk 199 Mod ( )
7211U2 Train Power Drive
Includes: Mk 61 Mod 0 & 1
7211U3 Elevation Power Drive
Includes: Mk 62 Mod ( )
7211U6 Train Receiver Regulator
Includes: Mk 46 Mod ( )
7211U7 Elevation Receiver Regulator
Includes: Mk 62 Mod ( )
7211W1 Carriage Assembly
Includes: Mk 7 Mod 2,3,& 4
7211Y6 Weapon System Accessories
7211ZZ Rail Selector Relay Rack
7212L1 Launcher Stand Assembly
Includes: Mk 22 Mod 4
7212L2 Guide
Includes: Mk 9 Mod 1
7212L5 Amplifier Power Drive
Includes: Mk 40 Mod 4
7212PJ Panels
Includes: Control Mk 65 Mod 3
7212OP Power Supply Assembly
Includes: Mk 143 Mod 0
7212QV Pump Assembly-Hydraulic
7212U2 Train Power Drive
Includes: Mk 1 Mod 1
7212U3 Elevation Power Drive
Includes: Mk 1 Mod ( )
7212U6 Train Receiver Regulator
Includes: Mk 29 Mod 3
7212U7 Elevation Receiver Regulator
Includes: Mk 21 Mod 3
7212W1 Carriage Assembly
Includes: Mk 11 Mod 0
7212Y6 Weapon System Accessories
Includes: Test Set Mk 509 Mod 0 Launcher Area Safety Switch
72124M Motor Generator Set
Includes: Mk 6 Mod 1
FF-1052 Class
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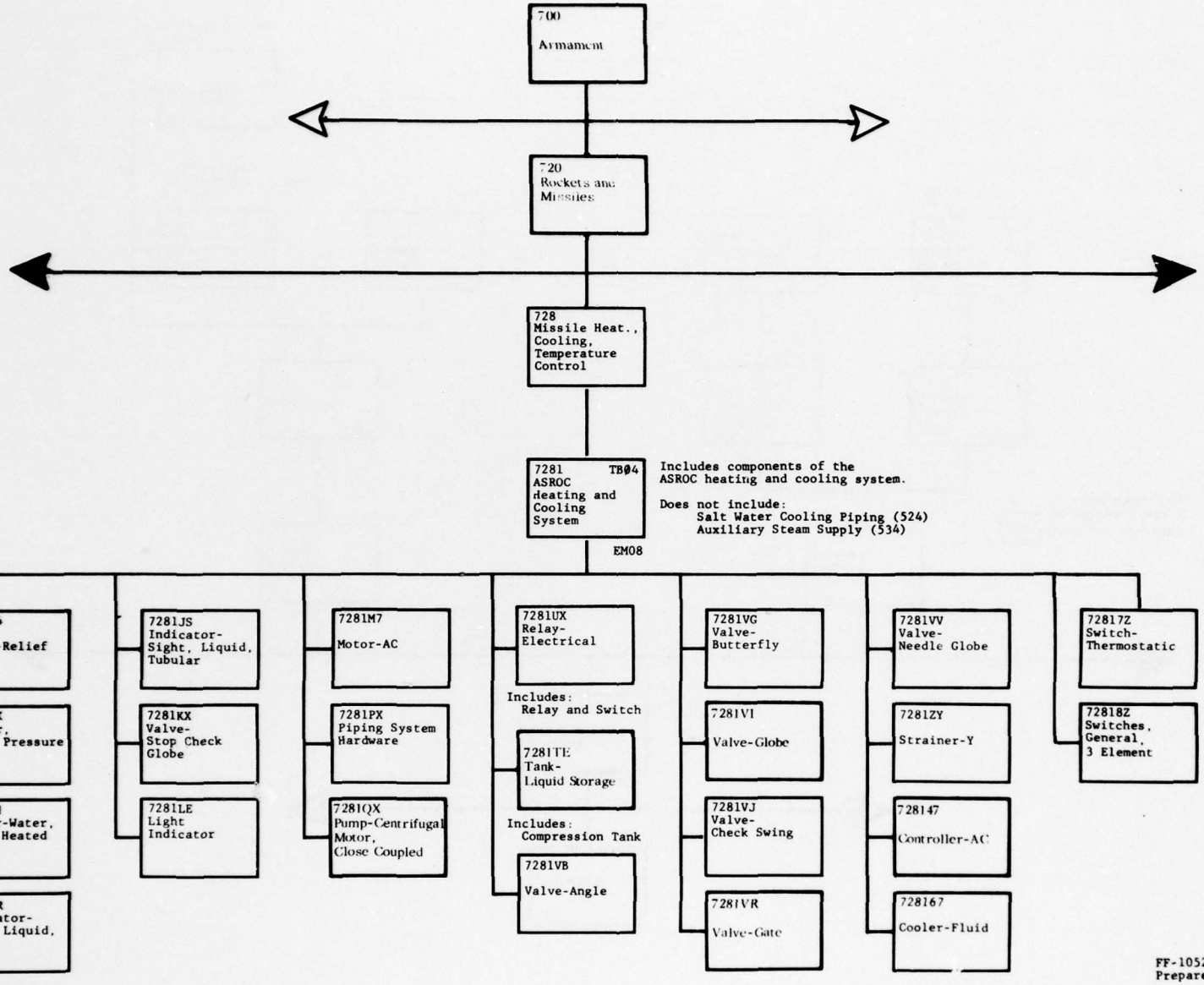

700
Armament
720
Missiles and Rockets
722
Missile, Rocket and Guidance Capsule Handling Sys.
7221 JF00 8900
ASROC Handling System
Includes ASROC handling system components.
Does not include:
Replenishment-at-Sea Equipment (570)
7221A4
Valve-Relief
7221FK
Filter-Fluid Pressure
7221GN
Gear Assembly Speed Decreaser
7221HY
Hoist Electro-Hydraulic-ASROC
7221H1
Hoist-Chain Pneumatic
7221K1
Valve-Reducing
7221K2
Valve-Hydraulic Control
7221K3
Pump-Axial Piston
7221K5
Valve-Hydraulic
7221K8
Valve-Check, Inline
7221LP
Lubricator
7221M7
Motor-AC
7221Q9
Pump-Reciprocating, Hand
7221RL
Reeling Machine-Cable
7221UR
Container
Includes:
Mk 183 Mod ( )
7221VB
Valve-Angle
7221VI
Valve-Globe
7221VJ
Valve-Check
7221VR
Valve-Gate
7221VV
Valve-Needle Globe
7221V0
Valve-Rotary Directional Control
Includes:
Valve Directional Control
Valve Check, Hydraulic
7221V6
Valve-Solenoid
7221W9
Hoist Assembly, Weapon System
Includes:
Hoist Electric Wire Rope Hoisting Beam
Mk 24 Mod 0
7221YE
Truck-Hand Lift
Includes:
Mk 42 Mod 1 & 2
Mk 45 Mod 0
7221YP
Winch-Snaking
7221Y6
Weapon System Accessories, ASROC
Includes:
Mk 28 Mod 1 Adapter
Mk 75 Mod 0 ASROC Sling
Mk 79 Mod 0 Sling
Mk 99 Mod 0 Sling
7221IQ
Pump-Rotary Power
7221IY
Crane, ASROC Loader
Includes:
RH & LH
FF-1052 Class
Prepared 9-28-76



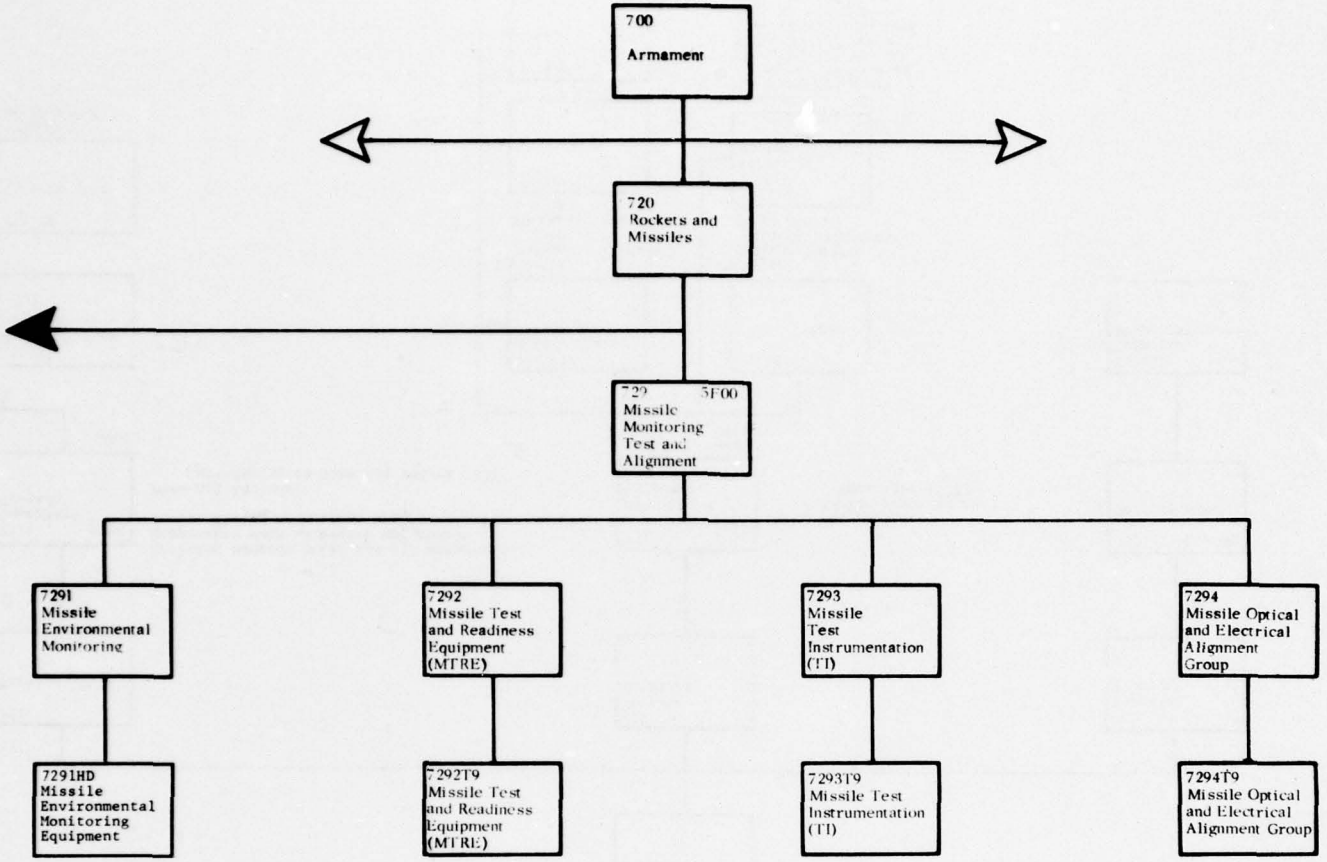
FF-1052 Class
Prepared 9-28-76



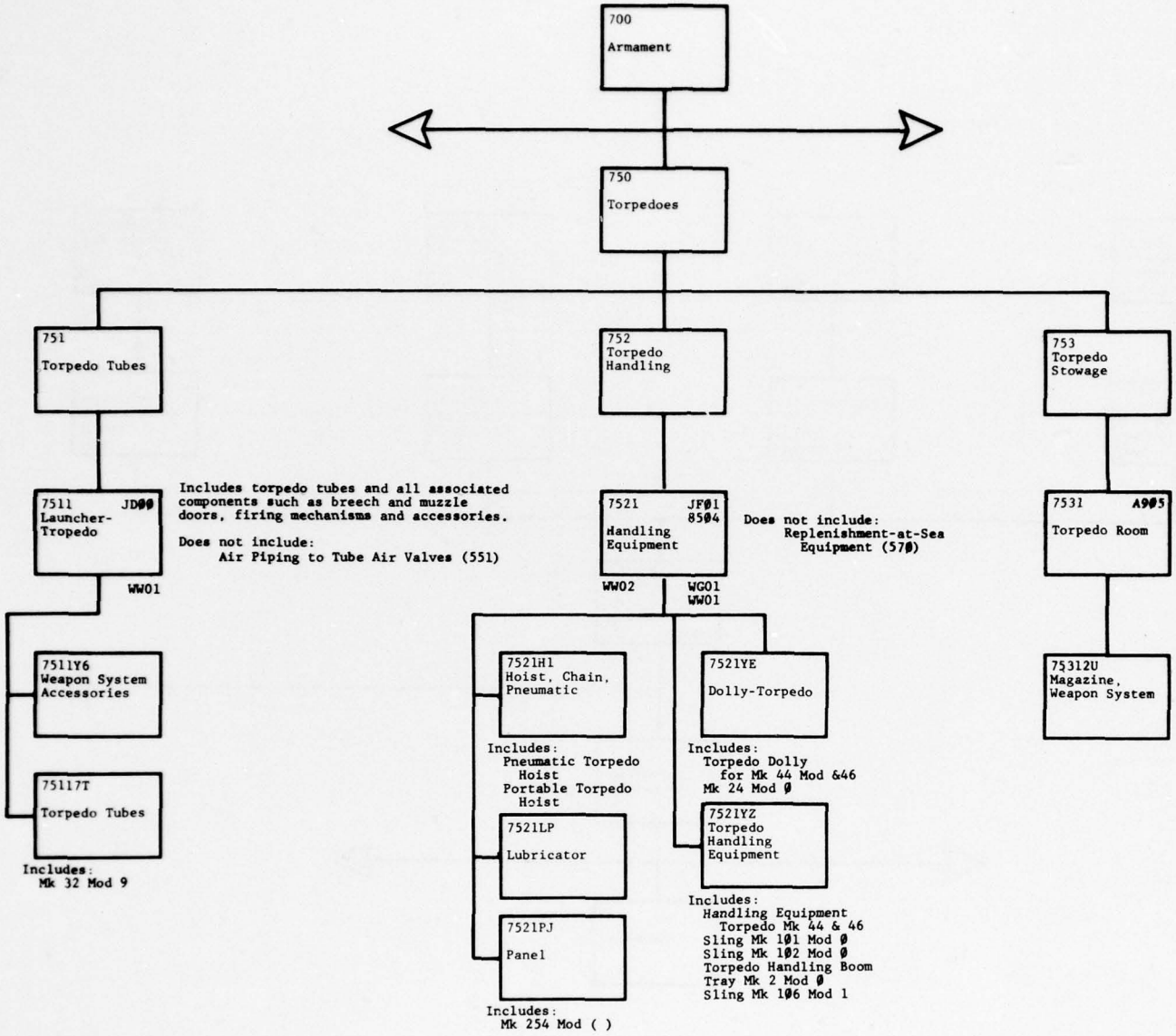
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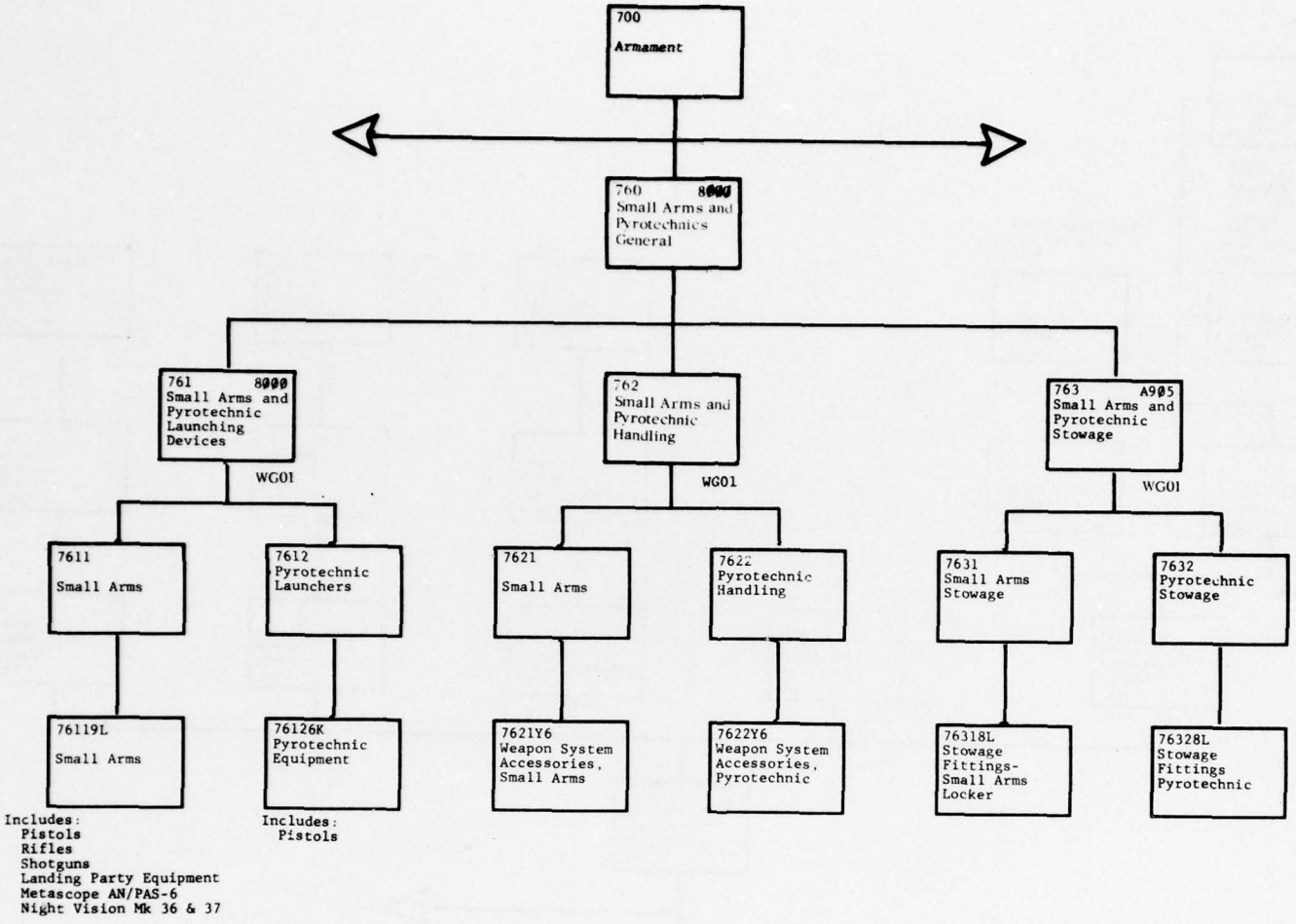
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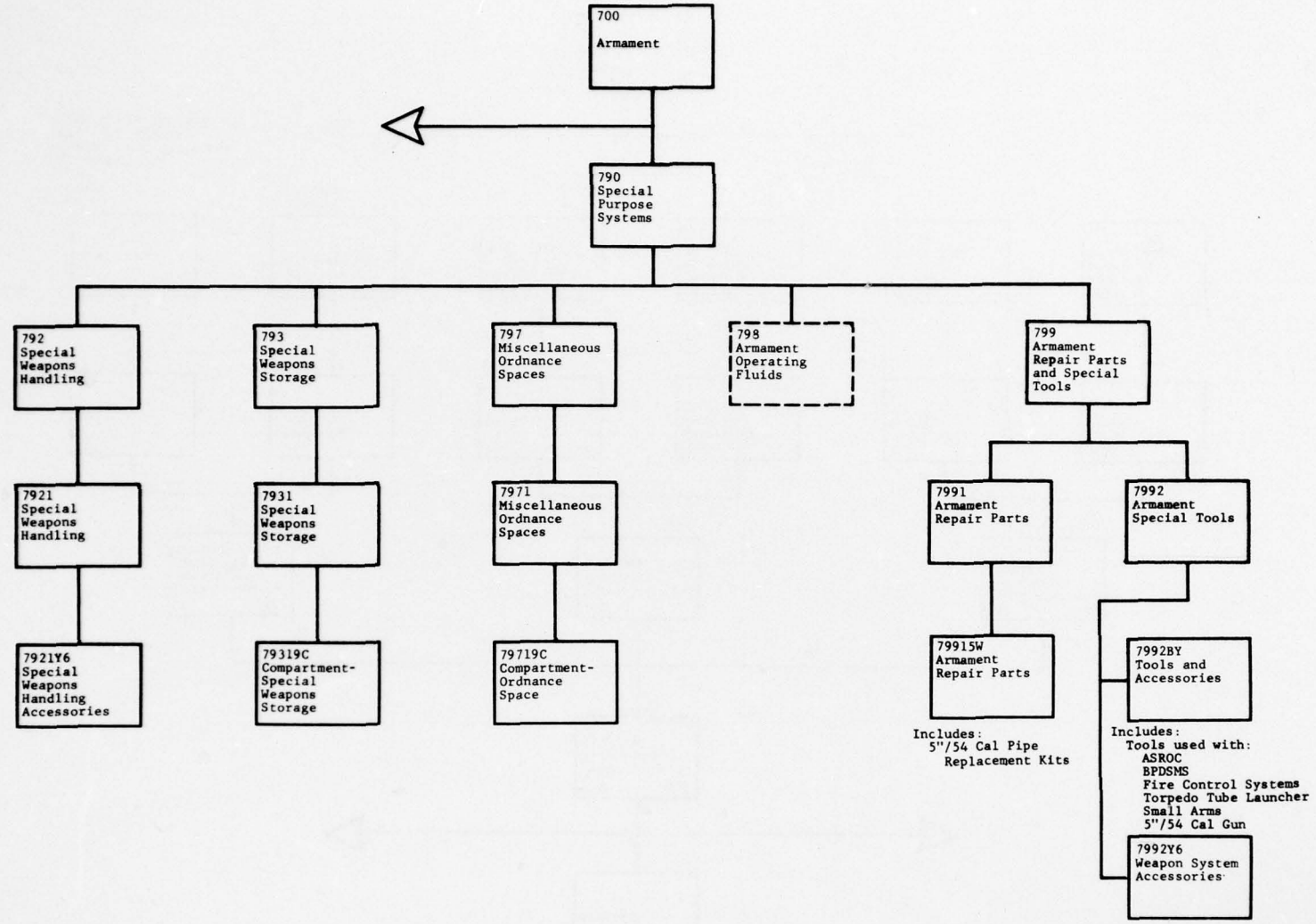
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Prepared 9-3-76



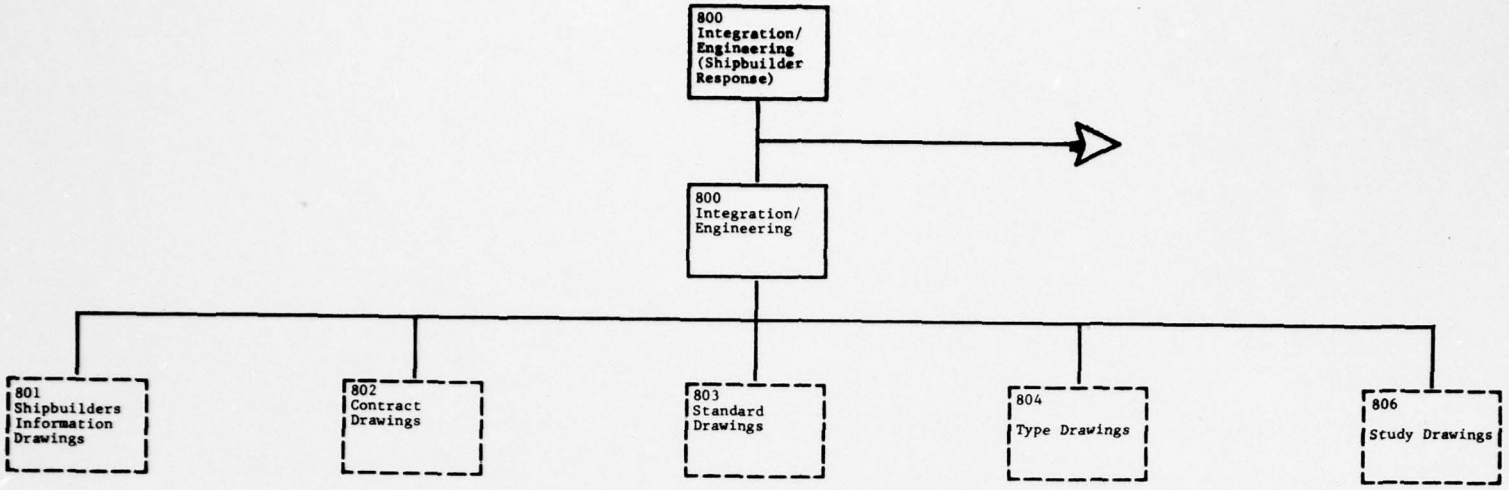
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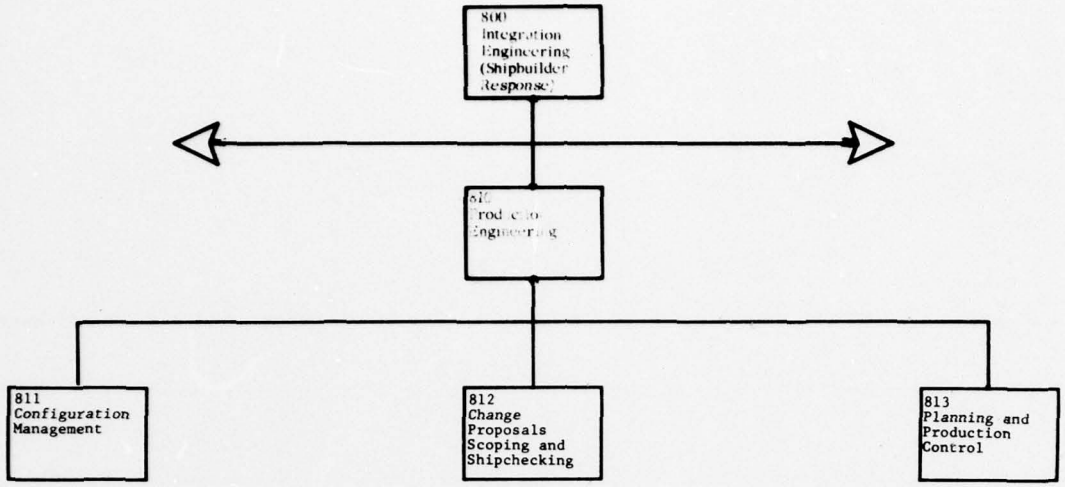
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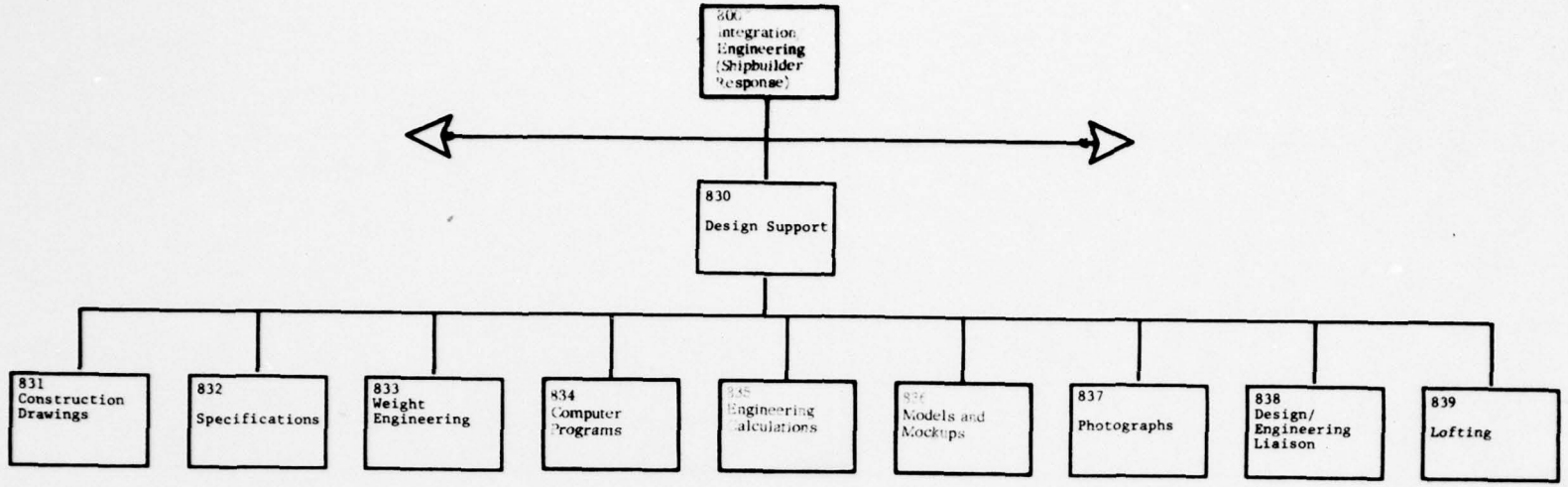
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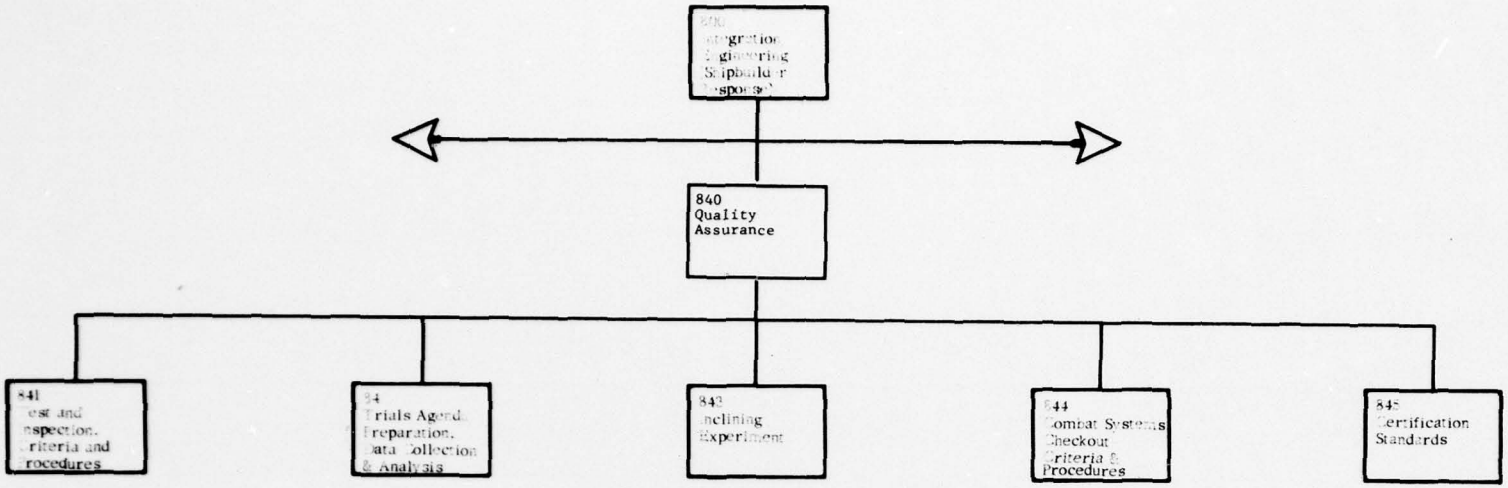
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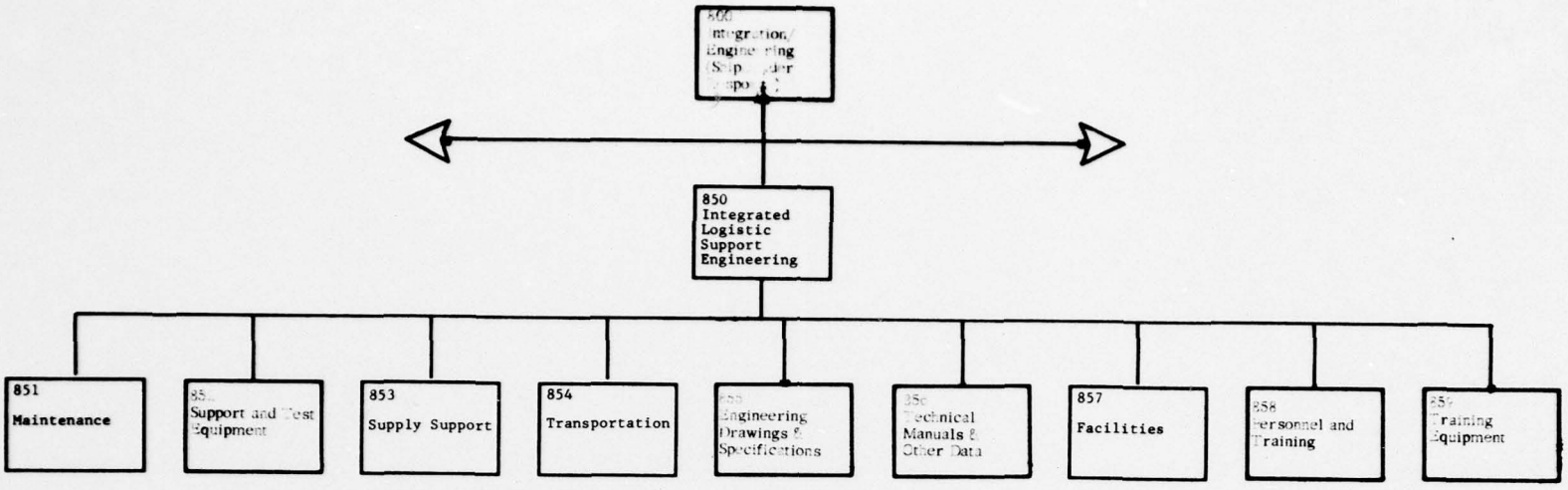
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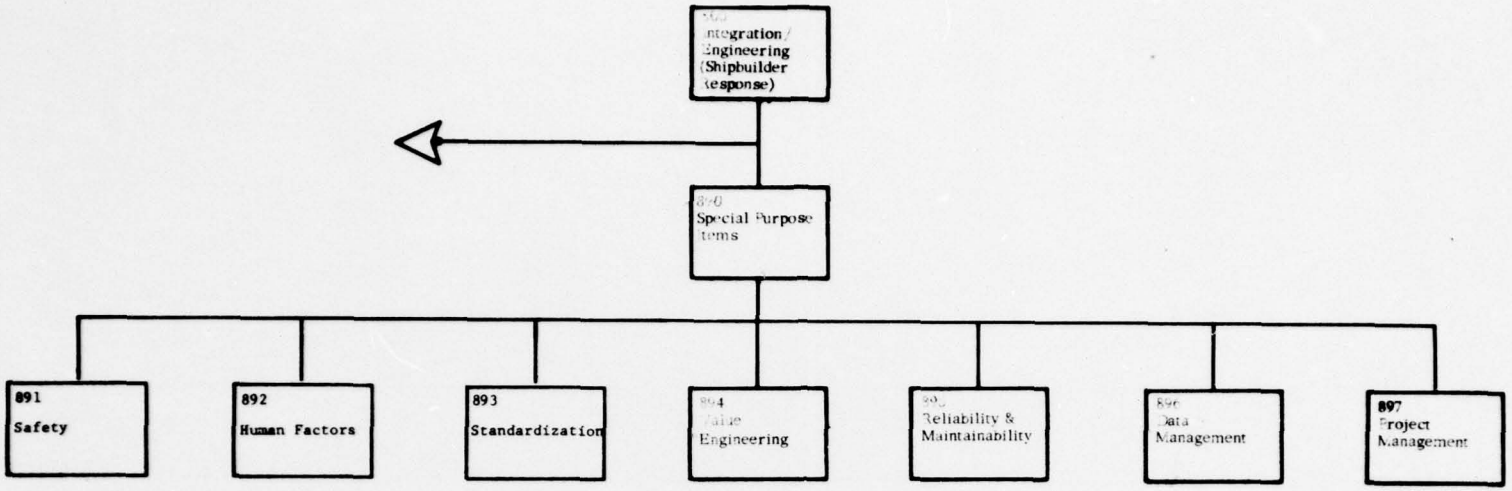
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